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AMERICAN

MEDICAL AND PHILOSOPHICAL

REGISTER.

THE

AMERICAN MEDICAL AND PHILOSOPHICAL REGISTER;

OR,

ANNALS

OF

MEDICINE, NATURAL HISTORY, AGRICULTURE,
AND THE ARTS.

CONDUCTED BY

DAVID HOSACK, M. D. F. L. S.

Professor of the Theory and Practice of Physic and Clinical Medicine in the University
of the State of New-York, &c.

AND

JOHN W. FRANCIS, M. D.

Professor of Materia Medica in the University of the State of
New-York, &c.

VOLUME III.

NEW-YORK:

PUBLISHED FOR THE PROPRIETORS,

BY C. S. VAN WINKLE.

....

1814.

TO

BENJAMIN RUSH, M.D. LL.D.

Professor of the Theory and Practice of Physic and
Clinical Medicine, in the University of
Pennsylvania, &c. &c.

SIR,

As many of the medical opinions contained and defended in this work are widely different from those which you profess, and have long laboured to established, you will, perhaps, be surprised to see your name prefixed to the dedication of this volume. But in looking through the United States for the physician who has most distinguished himself by his talents, his acquirements, his literary and professional labours; in whom are most conspicuously united the eminent practitioner, the accomplished scholar, the advocate of virtue and religion, the friend of man, and of his country, the Editors are induced, with one accord, to tender to you this testimony of their respect; to which they add their fervent wishes for the continuance of your exemplary and useful life.

THE EDITORS.

PREFACE.

THE third volume of the AMERICAN MEDICAL AND PHILOSOPHICAL REGISTER is now before the public. Of the general merits of the work it would ill become the Editors to speak: they, however, may, with propriety, remark, that in the present volume will be found no relaxation of effort to render the undertaking permanently useful. The character of the work, for originality of materials, has been faithfully preserved, and for able communications they have received from the enlightened and the liberal in different quarters of the Union, they cheerfully offer their warmest acknowledgments. To the future medical historian of America, nothing can be more deeply interesting than accurate accounts of our epidemical diseases. To obtain the most correct information relative to that important class of disorders, and faithfully to record it, has ever been of first consideration with the Editors; and many valuable essays tending to this object will be found in the present as well as in the former volumes of the Register.

It will be easily seen from the execution of the work, that the various improvements promised on a former occasion, have been fully carried into effect.

THE EDITORS.

New-York, April 1*st,* 1813.

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D^r. EDWARD MILLER

THE
AMERICAN
MEDICAL AND PHILOSOPHICAL
REGISTER.

JULY, 1812.

ORIGINAL COMMUNICATIONS.

I.

ACCOUNT *of the Life and Character of* EDWARD MILLER, M. D. &c. *of New-York.*

(With an Engraving, by Leney.)

IN recording the life and character of this eminent physician, we derive our materials not from the uncertainty of report, or of tradition, but from personal observation and experience, such as habits of daily intercourse have furnished us: the authenticity of our materials may therefore be depended upon; and the opinions we express are what our judgment dictates, so far as our judgment is competent to direct us. There appears to be peculiar propriety in holding up the character of Dr. Miller for general imitation. Our country has as yet produced but few in whom were to be found more eminent talents as a physician, and more general information as a scholar, united with unblemished integrity of conduct, and the greatest urbanity of deportment. May the humble and unadorned narrative of his life awaken the sensibility and rouse the generous emulation of youth, to imitate his virtues and profit by his example.

Edward Miller was born at Dover, in the state of Delaware, on the 9th of May, 1760. He was the son of the Rev. John Miller, and of Mary Millington, his wife. His father bore the relation of pastor to the presbyterian church in that place, with exemplary diligence and piety, for more than forty-three years. His parents had nine children, seven sons and two daughters; of whom, only one son and one daughter now survive. Of his six brothers, two died in infancy. His eldest brother, *John*, who was bred a physician, and who entered the American army as a volunteer surgeon, in 1776, died in February, 1777, in the twenty-fifth year of his age, while on his way from the camp in New-Jersey to pay a short visit to his parents. His next eldest brother, *Joseph*, who was a counsellor at law, and more than once a member of the legislature of his native state, died at Wilmington, in Delaware, of the yellow fever, in September, 1798, a few weeks after his marriage, and in the thirty-fourth year of his age. His youngest brother, *James*, who was also bred to the law, died of a pulmonary consumption, in the twenty-third year of his age, at South-Carolina, whither he had gone for his health, in 1795, just as he had concluded his studies, and was about to enter on the business of his profession. These three brothers were all of them men of superior talents, and enjoyed, in a very high degree, the respect and confidence of their native state. His only surviving brother is the Rev. Dr. Samuel Miller, of New-York, of whose learning, talents, and professional eminence it is unnecessary, in this place, to make mention: they are displayed in his various writings on theology and general science, among which may be particularly noticed, his Brief Retrospect of the Eighteenth Century, a performance deservedly placed among the number of those that have most successfully vindicated the literary character of America.

Edward Miller, the subject of these memoirs, passed the first fourteen years of his life under his paternal roof, and commenced his acquaintance with the Latin and Greek languages, under the direction of his father, who was a good Latin, Greek, and Hebrew scholar. At about the above-mentioned age, he was sent to an academy of high reputation, at Newark, in Delaware, which flourished for a number of years under the care of the Rev. Drs. Francis Allison and Alexander M'Dowell. In this academy, the arts and sciences as well as the languages were taught; but it was particularly celebrated for classical literature, and it is no inconsiderable encomium to say, that a great number of the most profound and erudite scholars of our country, acquired their knowledge at this institution. Indeed it was a college in every thing else but in name.

On leaving the academy, where he greatly distinguished himself by his partiality for, and his skill in classical literature, a partiality which he manifested to the end of life, he commenced the study of medicine, under the direction of Dr. Charles Ridgely, an eminent physician in Dover. He soon acquired a high character as a student of medicine, and gained the respect and esteem of his fellow companions; and Dr. Ridgely, with that urbanity and liberality which greatly distinguished him, was so pleased with the talents and deportment of the youthful votary of the healing art, that he made offers to him of the most liberal kind, and always treated him as a favourite pupil. About this time, he attended two courses of medical lectures in the university of Pennsylvania.

On completing his medical studies, or rather as a mean of extending and completing them, Edward Miller spent about a year, in 1781 and 1782, in the military hospital at Baskingridge in New-Jersey, in the capacity of a surgeon's mate. In the summer of 1782, he went to France, as the surgeon of an armed ship. On that voyage, and while in France, he learned the French language, which he afterwards cultivated and retained, and which he spoke with great fluency. On his return from France, in the summer of 1783, he entered on the practice of medicine, first in Somerset county, in Maryland, and afterwards in his native town, Dover. In this latter place he settled about the year 1786. In 1785, he was admitted to the degree of batchelor of medicine in the university of Pennsylvania. According to a regulation then in force, it was necessary for that honour to precede the degree of doctor in medicine, at least three or four years. In 1789, he was graduated doctor in medicine in the same institution. On this occasion, having undergone the usual examinations, he submitted, and afterwards published, a Latin Inaugural Dissertation, *De Physconia Splenica.* When it is considered that he wrote this exercise wholly himself, without the smallest assistance from any one; and that amidst the duties of an active life, he had been out of the habit of writing Latin for a number of years, it affords ample evidence that his early initiation into that language had been of no slight or ordinary kind. In Dover he spent ten years; the greater part of the time in an extensive and successful practice. Here, however, as during the whole course of his life, he manifested a great thirst for general knowledge, and especially for medical discovery and improvement. He generally visited Philadelphia, at least once a year, sought for all the new publications within his reach, sent to Europe for those which he needed and could not procure in America, and at that early period, began that correspondence with eminent physicians beyond the Atlantic, which he continued and extended as long as he lived.

In the year 1796, he removed to the city of New-York, a situation which afforded him a greater field for the exercise of his talents, and an opportunity of enjoying the society of his only surviving brother. Beside discharging the practical duties of his profession, he now devoted himself more closely to the cultivation and extension of the science of medicine. In a few months after his removal to this city, he commenced, in conjunction with Dr. Mitchill and Dr. E. H. Smith, the publication of the Medical Repository, the first journal of the kind established in this country. Though shortly deprived by death of his much lamented associate, Dr. Smith, he, in connexion with his learned and able colleague, continued the management of that work, with distinguished success, for upwards of fourteen years. In 1803, he was appointed resident physician for the city of New-York, which office he continued to hold, with the intermission of one year, to the close of his life. In 1805, he was elected a member of the American Philosophical Society; and, upon the organization of the College of Physicians and Surgeons of New-York, was appointed, by the regents of the university, professor of the theory and practice of physic in that institution. In 1809, he was chosen one of the physicians, and a clinical teacher in the New-York Hospital.

While thus engaged in the discharge of the duties of his profession, he was attacked about a month previous to his death with symptoms of pneumonia, which yielded to the ordinary treatment pursued in that disease. His complaint, however, soon returned with increased violence, assuming the typhoid character, attended with considerable irritation of the nervous system, and great prostration of strength. In this condition he continued until the time of his dissolution, which took place on the morning of the 17th of March, 1812, in the fifty-second year of his age.

His chief publications were, an Inaugural Dissertation, *De Physconia Splenica*, printed in 1789. His Report on the Malignant Yellow Fever which prevailed in New-York in 1805, in a letter to Gov. Lewis, printed in 1806. His papers in the Medical Repository; and the Appendix to Dr. Thomas's Practice of Physic, containing chiefly the above mentioned "Report," printed in 1811.

From the review of the life and literary labours of Dr. Miller, let us now turn to a consideration of his character. Whether we consider Dr. Miller as a physician or as a man; whether in the walks of public or in private life, he has equal claims to our respect and admiration. Endowed by nature with a mind at once quick in its perceptions and comprehensive in its views, and with a memory extremely retentive and accurate, he acquired, from his great thirst for knowledge and devotedness to study, an intimate acquaintance with the science of medicine. From his proficiency in the Greek and Latin languages, and in those of modern Europe, he was enabled to obtain ready access to the treasures of knowledge contained in the writers of those nations. This knowledge he particularly displayed in his public instructions as a teacher. Of his merits, in the immediate exercise of the duties of his profession, it is unnecessary to enter into any minuteness of detail. To his comprehensive knowledge, he added a patient attention to the safety of those committed to his care, and ever retained a high sense of the responsibility attached to the medical character. To an address the most engaging, from a happy union of dignity, respectfulness, and ease, was added a gravity of deportment that evinced a due concern for the distresses of those whom he was called upon to relieve. The kindred sympathy which his feelings constantly manifested, and the encouragement and consolation which the sensibility of his heart and the resources of his cultivated mind always supplied, enabled him to discharge the double duties of the friend and physician, and alike to minister relief to the afflictions of the mind, with no less efficacy than to the diseases of the body.

The distinction which Dr. Miller attained did not depend upon his acquaintance with those branches of knowledge only which belong to his profession; they indeed were the objects of his primary attention, but there were other objects of which he was far from being neglectful. Believing that liberal and elegant studies give additional lustre to character, and ennoble professional reputation, he devoted a considerable portion of his time to the acquisition of general science and the ornamental parts of literature. From his writings, an idea may be formed of his literary qualifications, and his various accomplishments as a scholar. Their chief object was a defence of the doctrine of the domestic origin of yellow fever, and the non-contagious nature of that disease, a doctrine of which he and Dr. Rush are acknowledged the most zealous and successful advocates.

> ——————————si Pergama dextrâ
> Defendi possent, etiam hâc defensa fuissent.

We have already discussed the subject at some length in the preceding volumes of the Register; we have stated our opinions with an earnestness arising from the deepest conviction of their correctness, and we believe that the facts and arguments we have adduced fully justify the matter of our remarks. In the warmth of discussion some hasty expressions may have escaped us; but we recant not an iota from any thing we have said material to the controversy.

But however highly Dr. Miller was to be admired for the endowments of his understanding and his various attainments, the sentiments of affection and esteem are more forcibly excited by the exalted qualities which adorned his moral nature. In every relation of life, both public and private, he was uniformly guided by principles of the purest integrity. No man seems to have been more sensible of the dignity of his profession, and no one was ever more guarded lest that dignity be sullied. In his political opinions he was uniform and decided, yet the spirit of party never so far influenced him as to become the mountebank politician. Such conduct he considered incompatible with the character of a physician. His fellow citizens manifested a grateful sense of his worth, and appointed him for a series of years to an office of high respectability. Despising the low artifices by which many obtain professional practice, he was distinguished for his fine sense of propriety and honour in his intercourse with his brethren of the faculty. The writer of this imperfect sketch, who has often witnessed his delicacy in this respect, would do injustice to his own feelings were he not to state, that his deportment conciliated the affection of all, and is worthy of universal imitation. As a philanthropist, he exercised an extensive charity to the poor in gratuitous medical services. It were needless to dwell upon his character, as displayed in the circle of his immediate friends, whom the ties of consanguinity, or whom similar inclinations and pursuits had united in the bond of friendship. He evinced all the energies of social affection; he loved with all the warmth of fraternal kindness.

New-York, May 22*d*, 1812.

II.

OBSERVATIONS *on the use of the* COLD AFFUSION *in* TETANUS *and* CONVULSIVE DISORDERS, *read before the Medical Society of South-Carolina, on the* 2*d March*, 1812. *By* THOMAS G. PRIOLEAU, M. D. *Communicated for the Register, in a letter to Dr.* HOSACK.

To the Medical Society of South-Carolina.

GENTLEMEN,

As the external application of cold water in fever and some other diseases is rather a novel practice in this state, and as yet adopted by very few physicians, I think it my duty to lay before this society, a detail of several cases, selected from a great number, in which I have employed it with success. I do this with a hope of inducing other gentlemen to make trial of a remedy which I cannot but regard as very efficacious, and indeed almost certain, in typhus, a certain species of pneumonia,* tetanus, and convulsive disorders. Though the rules laid down by Dr. Currie are excellent, and should be observed as far as they apply, yet they may be extended further; that excellent physician conjectures, that it would be equally beneficial in many inflammatory diseases. Dr. James M'Bride, of St. Stephen's Parish, in this state, and myself, have tested the truth of the conjecture by our practice. It was my intention, to the cases now detailed, to have added others of typhus as successfully treated under the same plan; but, from several considerations, I am induced to defer them to a subsequent meeting of the society.

I cannot omit paying my small tribute of respectful praise to Doctor James Currie, of Liverpool, to whom we are indebted for this improvement in medical science, and whose memory, as long as philanthropy warms the human breast, must be gratefully cherished by every lover of science and friend of humanity. I think it proper to mention, that this remedy was, I believe, first extensively used in this state, in typhus, by Dr. James M'Bride, of St. Stephens, about three years since (1808.)

Case first. Tetanus, cured by the cold affusion.

On the 9th of August, 1811, I was requested to visit a negro fellow, belonging to John Ball, Jun. Esq. of St. John's Parish, Berkeley. I was informed that the fellow had had frequent convulsive twitches and startings during the whole of the day preceding, which becoming more violent in the evening, terminated in complete tetanus, the paroxysms continuing about fifteen minutes, and the periods of intermission about half an hour. He had been in this state several hours before I saw him. I found him with his head and body bent back, his jaws locked, his countenance distorted, and the muscles of the extremities rigidly contracted; his breathing was stertorous and difficult, his skin hot and dry, and his pulse at ninety, weak and quick. In this situation he continued a quarter of an hour, when the spasms relaxed, and the paroxysms went off; he then complained of great soreness, and pain in the scrobiculus cordis, and the muscles which had been rigid; he could swallow, but with great difficulty, and dreaded doing so lest it should hasten the succeeding paroxysms; his bowels were costive; his skin still continued dry, but its heat had moderated; his breathing was easy, and his pulse at eighty-five, slightly tense; he had slight convulsive twitches; he had not taken any thing during the day but a little water.

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* See Le Conte's History of an Epidemic in Georgia, 1809, in the Medical and Philosophical Register, for October, 1810.

I found it difficult to ascertain the cause of his disease, and could not ascribe it to the weather, as the thermometer was but 84 deg. Faren. and the nights generally cool, but not more so than was usual at that season. The only cause the patient could assign, was a cut he had received by an ax, on the anterior part of the leg, five or six years before; he felt no pain in the part, and the place where the wound had been was only discoverable by a small cicatrix: I did not lay it open, or indeed make any external application, as I wished to give the cold affusion a fair trial. I thought even scarification unnecessary, it being doubtful whether the disease arose from the wound or not, as the patient had not experienced any pain or particular sensation in the parts.

I ordered about ten gallons of cold water, which was at the temperature of 65 deg. Faren. to be brought, my intention being to have the whole thrown over the patient at the moment of the recurrence of the next paroxysm. In twenty minutes from the time the last fit ceased the breathing became loud and difficult, the pulse quickened, the heat of the skin increased, the body bent backwards, and all the symptoms previously described returned. He was immediately taken out of his blankets, and the cold water thrown over his naked body; the effect was instantaneous; the spasms ceased, the breathing became easy, and the muscles completely relaxed; he was then wiped dry, and put into his blankets, a copious perspiration came on, his skin became cool, and in two minutes his pulse sunk to 76, and became full and round; he grew calm and composed, and experienced as fully as I ever had before observed in any case, the refreshing influence of the affusion. His only complaints now, were a general sense of weakness, and a dull pain or soreness in the scrobiculus cordis, and muscles which had been affected. I gave him forty drops of tincture opium, and ordered him to be kept as quiet and undisturbed as possible.

I remained with my patient some time after the affusion had been used, and during the time he had not the slightest return of the disease; he was inclined to sleep. When I left him there were no disagreeable symptoms present, his pulse was eighty, and natural. I desired the attendants, if the disease should return (which I thought doubtful) to repeat the affusion as soon as the paroxysm was formed, as it had already been attended with such beneficial effects.

In ten hours from my leaving the patient, I again saw him, and was told by the nurse, that he still remained free from the disease, and had not had the least indication of its return, but had sunk into a sound and refreshing sleep, which continued five or six hours; and that when he awoke, he had an evacuation by stool. He said he was well, but felt debilitated, with a slight degree of soreness over the body; he had taken some nourishment. Upon examination, I found his skin warmer and drier than natural, his pulse eighty-eight, and quick, his tongue slightly furred, and his respiration quickened. Conceiving that these symptoms indicated a return of the disease, I thought it requisite to remove them, and again employed the cold affusion, which was attended with its usual good effects, reducing the frequency and quickness of the pulse, taking off the heat and dryness of the skin, &c.

It being out of my power to remain with my patient, I ordered the nurse to use the affusion if any symptoms should come on which appeared to indicate a recurrence of the disease ; but as I thought it probable some disagreeable circumstances might take place at night, to repeat it then and the next morning. The next day (the 10th) thirty-four hours from the commencement of tetanus, I again saw the fellow, the cold affusion had been used the preceding night and that morning ; he slept well, had a good appetite, and was so completely convalescent, that I discontinued my attendance.

We meet, in many medical publications, with accounts of cases of tetanus, which have been cured by the most opposite treatment ; the most powerful stimuli and extensive depletion have been alike resorted to with success, in some instances, and the want of it in others. To reconcile this diversity of result may, perhaps, not be very difficult. The disease has always been considered as one of the opprobria of medicine ; may not this have arisen from physicians not taking sufficiently into consideration the state of the patients system at the time they prescribe ? A remedy which to one man may be beneficial, to another, under the same disorder, has been often known to prove fatal. Remedies, therefore, which have frequently proved successful, may prove otherwise, and to prescribe with effect, a knowledge of the disease and the remedy appear to be essential. Let me then explain what I think I have observed upon the subject of this disease, and the modus operandi of the remedy. I offer the theory with great deference, and shall be gratified if it should lead to an investigation by which truth may be discovered.

Tetanus, from whatever cause it may arise, I conceive to be a disease of general and great morbid excitement, tending rapidly to the dissipation of excitability ; its progress, however, being somewhat regulated by climate, hot and cold weather, predisposition, and many other circumstances. From this it would seem, that in the commencement of the disease it would be necessary to employ the antiphlogistic plan of treatment, in order to lessen the morbid excitement; but after the disease has formed some hours, and while the excitability is fast dissipating, we must have recourse to stimulants, accommodating them, however, to the state of excitement and excitability. The greater the marks of excitability, the stronger and more diffusive should be the stimuli, to convert the excitability into excitement and health; small doses, under such circumstances, would be injurious, as they would tend to dissipate the remaining excitability.

In this case, had I seen my patient but a few hours later, the excitability would have been so much exhausted, that the strongest stimuli would have been necessary before we could have raised the system to the point of reaction; consequently, until this had taken place, the cold affusion must have proved injurious. Fortunately, I saw the fellow at the time when the cold affusion was most palpably indicated; its use was therefore attended with complete success.

The succeeding cases are those of convulsions, the first in some measure constitutional, the others induced by the usual remote causes of the intermittent and remittent fevers of the country.

Case 2d. In October, 1810, I was called to a negro fellow, about twenty-six years of age, who was in convulsions. I was informed that he had been attacked in the same manner, about this season of the year, for the last three or four years, the disease always continuing three or four days; that while he was in this situation, various remedies had been resorted to, both by physicians and nurses; he had been bled most copiously at one time, and at another had taken the strongest stimulants and antispasmodics, but without the least advantage, the disease always continuing to its accustomed period. When I saw the fellow, he was in a state of coma, attended with convulsive twitches ; his breathing was loud and difficult ; his skin hot and dry ; and his pulse one hundred and twenty, quick and weak ; his eyes half closed, and the iris very considerably dilated. In this state he continued about ten minutes, when an exacerbation of the disease took place ; he became dreadfully convulsed and drawn backward. Such had been his situation for eight hours before I saw him, the paroxysms lasting about ten minutes, and succeeded by coma for the same length of time alternately.

I ordered about twenty gallons of water, (the temperature sixty-five degrees,) to be brought, and as the violent convulsions returned, he was taken out of his blankets, and the whole thrown over him. This was the only remedy that had made any impression on him since the attack ; he shrunk from the shock. The affusion immediately stopped the paroxysm, but the coma still continued. He was wiped dry, and put between the blankets, immediately the pulse sunk to one hundred, and became stronger and fuller, the skin was cool, but no sensible perspiration evident. In this way he continued about twenty minutes, when a recurrence of the paroxysm taking place, the same quantity of water was again thrown over him ; this had an effect similar to the last affusion, and lengthened the return of the next paroxysm to three quarters of an hour ; his pulse was now ninety-five, and some perspiration was perceptible on the breast and forehead.

Another paroxysm now came on, being preceded as the others, by increase of heat, and quickness of the pulse ; the affusion was again used, and with much advantage ; his pulse became nearly natural in frequency, was full and stronger, the skin moist, and respiration easier. The coma still continued, but less violently.

As I was now obliged to leave the patient, I ordered the attendants not to repeat the affusion unless the recurrence of a paroxysm took place. In this state he continued for sixteen hours, when a paroxysm coming on, recourse was again had to the cold affusion; the fit ceased immediately, and sensation returned perfectly. From this time he was convalescent; his pulse was full, at eighty-five, and somewhat tense; the breathing was easy and natural, and the skin moist. He complained of pain in the head, and great soreness of the body generally; I ordered him a cathartic of calomel and jalap, which operating, relieved him considerably. The following day, I again saw my patient; he had not had the least recurrence of the disease since the day before, and was so well, that I discontinued my attendance. He has continued well ever since, and passed the usual period of the attack of the disease without any disagreeable circumstance attending.

Case 3d. Miss Charlotte Prior, in St. John's Parish, Berkeley, a girl of twelve years of age, was attacked with fever, on the 20th August, 1811, so slightly that her parents thought it unnecessary to call in medical assistance, but gave her a gentle cathartic, which operating, left her free from fever in the evening. During the night the fever returned, accompanied by violent convulsions. I was then sent for, but did not arrive until the 22d, after a lapse of thirty-six hours from the attack, the whole of which time she had continued convulsed, and in a state of insensibility. Several medicines had been given her, as tincture opium, tincture assafœtida, &c. she had also blisters and sinapisms applied to the body and extremities, but without the least effect. When I saw her, her pulse was weak and quick, and so frequent, that it was with difficulty counted; her breathing was stertorous, the tongue dry and furred, and the eyes half closed; the skin was hot and dry. For a few minutes the convulsions subsided into convulsive twitches, but soon returned again violently.

In this case the cold affusion was most strongly indicated by every symptom; it seemed to me the only thing that promised any relief; and after I had succeeded in removing the prejudices and objections of the parents, I caused her to be taken out of bed, while the convulsions were most violent, and ten gallons of water, sixty-five degrees, into which a pint of common salt had been dissolved, to be thrown over her naked body. She was then wiped dry and put into bed, immediately a perspiration came on, the heat of the skin moderated, the pulse sunk to ninety, and became more full; respiration easy. She now readily drank some cold water which was offered her, the only thing she had been able to swallow for several hours; she lay quiet and easy, apparently in a sound sleep, without the least starting or convulsive motion. In this state she remained two hours, when the breathing again became loud, the skin hot, and the pulse quickened, and increased to one hundred and twenty; she started violently. She was again taken out of bed, and the cold affusion repeated; it was attended with complete success; her pulse sunk to ninety, and became full and strong, a copious perspiration came on, and her breathing was easy; her senses returned. The cold affusion was not again used; as the disease went off from this time, I ordered her a camphorated julap; and the next day she began to take the peruvian bark, and was convalescent. The blisters and sinapisms had by this time drawn, and gave her considerable pain.

I have only now to remark, that in a tolerably extensive practice, during the three years last, in which I have often used this remedy, I have seen only two cases of convulsions, in which the cold affusion was unsuccessfully used: the one was of a young child, in which the remedy was resorted to at a late period of the disease, and with a very feeble hope of success; the other was the daughter of John H. M'Call, Esq. a child of eight or nine years of age; she had, but a week previous to her being attacked with this disease, recovered from a severe typhus fever, in which the cold affusion had been successfully used; she was therefore much debilitated, and her strength was only sufficient to enable the system to react feebly. The convulsions were checked by the affusion, but the debility was so great that nature was soon exhausted: other remedies were also used in both these cases. They occurred during the last summer, one of the most unhealthy seasons that has been known for several years.

Charleston, March 2, 1812.

III.

Observations *on the Influence of Habit in accommodating Animal and Vegetable Life to Diversity of Climate and Temperature: on Torpidity, Vital Suspension, and Revivescence, as exemplified in the Phenomena of Hybernating Animals: Cautions on the Treatment of Vital Suspension, with a view to elucidate the theory and improve the practice. By* A. Fothergill, M. D. F. R. S. *Member of the Royal College of Physicians, and of the Medical Societies of London, Edinburgh, Paris, &c. &c.*

> Opinionum commenta delet dies naturæ judicia confirmat.—Bacon.

So admirably is the human frame constituted, as to enable it to accommodate itself to all the varieties of climate, and all the vicissitudes of seasons; to sustain the fervors of an equinoctial sun, or brave the rigours of a Siberian winter. Man, though born naked and defenceless, finds means to guard himself against the utmost extremes of heat and cold, which otherwise would prove incompatible with life. But to his native powers is superadded that divine attribute, reason, which is no sooner matured, than it gives him a decided superiority over all other animals, not only in sustaining hardships, and bearing vicissitudes, but in contemplating, with an eye of intelligence, the past, the present, and the future. Other animals are, with no less wisdom, adapted to their situation, and endowed with instinct, which well supplies the place of reason, by enabling them to provide for themselves, and shelter their young against the inclemency of the seasons. Hence, no climate yet known, can be pronounced too hot or too cold for its native inhabitants. But man is destined to take a much wider range than other animals, which qualifies him to become a citizen of the world; to explore its highest mountains, and deepest mines; to traverse the ocean from pole to pole, and hold social intercourse with the remotest nations, even with the antipodes. With such natural powers and pliability of constitution to bear such variety of climate and extremes of temperature with impunity, whence is it that a large portion of mankind can scarcely sustain the sudden variations of their native climate, however temperate, without contracting some malady? The hardy Russian, on emerging from the hot vapour bath, though reeking from every pore, hastily plunges into cold water, or delights to roll in the snow. The pampered East Indian, who by luxury and indulgence has reduced himself to the state of a hot-house plant, contemplates the Russian experiment with horror, and though wrapped up in his furs, shivers at every cool breeze.

Men are so much the creatures of habit, as to become just what early discipline and education conspire to make them. Fashion betrays her votaries into a mistaken tenderness and over delicacy, in the treatment of children, highly unfavourable to health and firmness of constitution; hence that morbid susceptibility, which renders them tremblingly alive to sudden changes of weather, and becomes a source of many serious evils through the subsequent stages of life. Nor is this all; the same valetudinary predisposition is often unfortunately transmitted from parents to children. It may indeed be acquired, at any period of life, by intemperance, long abstinence, depressing passions, or whatever tends to weaken or enervate the system ; but whether hereditary or acquired, it can never perhaps be entirely subdued, but by firm resolution, and perseverance in establishing a contrary habit.

Heat and cold being in reality only relative terms, their operation on animal and vegetable life varies, according to the state and habitude of the animal or vegetable to which they are applied. Persons inured to the changes of a variable climate can well bear the extremes of temperature, which, to a new comer, seems almost insupportable. Mr. William Dunbar of Natchez, relates his having witnessed the existence of living animals and vegetables in the hot springs of Ouachita, the extraordinary temperature of which is said to approach the boiling point.

A counterpart of this singular phenomenon was observed by Dr. S. Brown of Lexington: some grains of wheat, accidentally left in straw employed to cover a solid mass of ice in an ice house, vegetated at the wonted season, and penetrated the transparent ice to the depth of nine inches, by innumerable fibres of the root, which had thawed for themselves sufficient openings.* Such is the energy of the vital principle in vegetables, as well as animals, in resisting extremes of temperature, and in accommodating them to uncommon and even perilous situations.

In the well known experiment recorded in the Philosophical Transactions, Dr. George Fordyce, and his philosophical companions, sustained, for a considerable time, the temperature of the room, when heated to the amazing degree of 214 of Farenheit's thermometer, which exceeds the heat of boiling water! To complete the bold experiment, they issued out of the scorching room into the cold evening air, and walked home without suffering any inconvenience. On the other hand, delicate and fashionable females, overpowered by the heat of a room of 75 or 80, sometimes faint away.

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* See American Medical and Philosophical Register, vol. 2d, p. 448.

The vegetable tribes, equally susceptible of heat and cold, and other atmospheric impressions, also promptly obey the impulse of their early habits. Some prefer shady places, others delight to bask in a sunny situation; some resist the severest winter, others are rendered torpid and lifeless by a single night's frost. The delicate natives of the torrid zone, when transplanted into a cold, or even temperate climate, droop and become sickly, till they are indulged with a proper degree of artificial heat, when they soon recover, and, by gentle means, may be trained to bear the open air, even in winter, till they become perfectly naturalized: yet for some time they claim their wonted periods of germination and flowering; for necessity alone can force them to relinquish their early habits.

Their ability, however, to acquire new habits, or to sustain great extremes, can only be attained by very slow degrees; for sudden transitions are equally inimical to animal and vegetable life; hence delicate valetudinarians become living barometers. In such persons, a sudden change from cold to heat rarifies the fluids, and causes immoderate excitement, which tends to exhaust the vital powers. On the other hand, a rapid transition from heat to cold, benumbs the faculties, condenses the fluids, diminishes excitement, and produces torpidity. Thus two opposite extremes, unless timely moderated, tend to the same fatal point, namely, the extinction of vitality. To restore the balance to the due medium of natural excitement demands the utmost caution.

2dly. *Hybernating animals;* their torpidity; vital suspension; and re-animation.

Let us next inquire whether the periodical torpidity and revivescence of hybernating animals, may not reflect some light on the subject of vital suspension in the human species.

Among the various animals subject to this property, the marmot and the dormouse have chiefly attracted the attention of philosophers, and their habitudes are best understood. Soon after the autumnal equinox, when the mercury descends below forty-two degrees, their drowsy disposition warns them to retire to their winter cells, where they coil themselves into a ball, and probably from the pleasurable sensations which accompany the first stages of sleep, they willingly yield to their destiny, and pass the dreary season of the year in a profound sleep, which affords a substitute for food. Torpidity then appears to be a wise law, imposed on these creatures to preserve their species from famine, at a season when otherwise they would perish.

Whether it is occasioned by a peculiar organization and absorption of fat, as some imagine, or merely the effect of habit, as others contend, has not been determined; to us it seems more probably to consist in a diminution of the functions of the brain and vascular system, brought on by the simple operation of cold, on bodies debilitated by scarcity of food, and is better calculated to explain the phenomena.

By a periodical repetition of concurring circumstances, it becomes habitual; but the habit, whether voluntary or involuntary, seems doubtful. It may, however, be broken by art. Professor Pallas kept a marmot in a state of vigilance through the winter, by means of a warm stove, and plentiful supply of proper food. Mr. Gough, by similar means, preserved a dormouse in activity. During their torpidity, respiration being suspended, and with it the generating power of heat, they become cold; motion, sensation, and all the functions cease, and they appear to be dead: if roused from this torpid state by violence, they languish and die: if left undisturbed in their cells, they revive about the vernal equinox, without any apparent cause, except the return of the vernal warmth. Mr. Gough informs us, that a garden snail, which had remained torpid three years, was, to his surprise, revived by merely immersing it in water. Eels, frozen till they become stiff and brittle, if covered with ice, may be transported to remote places, and yet, by cold immersion, return to life; but perish on the application of heat.

Plants, on the approach of winter, are in some measure subject to the same law; the stems of annuals die to the root; trees are stript of their foliage; the progress of vegetation is suspended; the feathered tribes are pensive and silent, and all nature seems to partake of the torpific disposition. Nor would man be wholly exempt, did he not counteract the propensity, by nourishing food, warm clothing, brisk fires, active employments, and social intercourse. When he is exposed to fatigue, cold, and hunger, he is compelled to yield to the common law; hence, in a rigorous season, the frequent instances, among distressed travellers and shipwrecked mariners, of persons frozen to death. In this melancholy situation, the first precursor of torpidity is an almost irresistible propensity to sleep, which, if unfortunately encouraged, proves the sleep of death. Of this deplorable state, the author of the "Seasons," in his winter scene, gives a pathetic and picturesque description.

——————————" And down he sinks
Beneath the shelter of the shapeless drift,
Thinking o'er all the bitterness of death:
Mix'd with the tender anguish, nature shoots
Thro' the wrung bosom of the dying man.
——————————On every nerve
The deadly winter seizes; shuts up sense;
And o'er his inmost vitals, creeping cold,
Lays him along the snows, a stiff'ned corse,
Stretch'd out and bleaching in the northern blast."

From the preceding observations, we learn by what mild and simple means nature restores dormant animals from torpidity and insensibility, to life and activity. Among those above mentioned, the dormouse and the marmot belong to the *mammalia*, and rank in the same class with man. During their torpidity, they are insensible to all stimuli, and afford a striking instance of the fallacious signs of death, and how easily the semblance may be mistaken for the reality. Shakspeare, who with eagle eye penetrated the hidden mysteries of nature, appears to have known this curious circumstance.

> " Death may usurp on nature many hours,
> Yet may life kindle again the o'erprest spirits."

The habitudes of torpid animals indeed, present a new field for future experiments, replete with useful instruction. Their revivescence, after a period of time which staggers credibility, shows how little we yet know of the extreme boundary to which it may extend, or where to fix the line between apparent and absolute death.

Medical science, improved by philosophy, and prompted by disinterested humanity, has, in modern times, rescued many persons apparently dead, from drowning, suffocation, or lightning, who formerly would have been given up in despair, and consigned to the grave. Nor are instances wanting, in these more enlightened times, of the like unhappy deception, particularly in cases where all hopes had vanished many hours before the funeral service, and where the error was not discovered till the day after interment; a circumstance too painful to contemplate! What an awful caution against hasty funerals, and particularly after sudden seizures, or where appearances are equivocal.

3dly. *Cautions on the treatment of vital suspension*, with a view to elucidate the theory and improve the practice.

In restoring suspended animation, notwithstanding the numerous examples of success, yet unexpected failures but too often occur, and where they were the least apprehended. Sometimes, after the most promising prospect of speedy recovery, a fatal relapse ensues, and blasts every hope of success. This, it is to be feared, sometimes happens from an incautious use of the most powerful stimulants, beginning at the top instead of the bottom of the scale, by which forcible mode of excitement, the feeble spark of vitality is unhappily extinguished. Thus may an over officious zeal defeat the most benevolent intentions; but the humane and prudent practitioner will gain wisdom even from his failures.

Here, so far as we can safely reason from analogy, the example of torpid animals affords an instructive lesson. When exposed to sudden heat or violent excitement, they perish; when left to the lenient hand of nature, they uniformly recover. The dormouse above mentioned, while the mercury stood at forty-two degrees, remained torpid; but when the thermometer rose to forty-seven degrees, the animal awoke, and became active. The dormouse which Mr. Hunter exposed to the reduced temperature of twenty degrees, being twenty-two degrees below the natural point of torpidity, brought life into imminent danger, which increased its powers of generating heat, and raised its own temperature from eighty-one to ninety-three. Such is the power of the animal economy to resist sudden changes of temperature, to accommodate itself to its situation, or repel danger. Yet according to M. Buffon, the generating power of heat in this and other torpid animals, has been found to be comparatively small.

The natural degree of human heat, at all ages, and in all climates, is between ninety-seven and ninety-eight degrees; but may be raised, by fever, to one hundred and ten, or reduced, by a prolonged immersion in a very cold bath, to seventy-six, which, though somewhat hazardous, is not incompatible with life, nor the accommodating powers of the system to adjust. What further reduction of human heat, by a refrigerating process, would be requisite to produce general torpidity or apparent death, we are yet to learn, and still more so as to the extent it might be carried consistent with a possibility of recovery. But on this important subject, many observations and experiments are still wanting, some of which could be only warrantably performed on brute animals. What approaches to the hopeless state alluded to, is that of a person, in a rigorous season, drowned under ice, till his extremities are frozen, and life apparently extinguished. When such cases occur, they afford the practitioner a fair opportunity of availing himself of the result of well directed experiments, for ascertaining the requisite degrees of excitement, and for conducting the whole process with more precision.

In all cases of apparent vital extinction, the same phenomena, already hinted, are observable. Respiration being suspended, the power of renewing heat ceases, together with sensation and voluntary motion, and the surface of the body is gradually reduced to the temperature of the circumambient atmosphere. But the heart and internal parts retain a portion of warmth and irritability some time longer, and while this continues, are more or less susceptible of motion, on the application of stimuli. Hence, to restore animation, the primary indication is uniformly the same, namely, to renew the action of the heart and respiratory organs; this happily accomplished, the brain and other organs gradually renew their respective functions. The judicious practitioner, regarding all existing circumstances, will regulate the treatment accordingly; not by violent means, but by gentle excitement gradually increased. Experience of late years has shown, in various cases of apparent death, from lightning, from the fumes of charcoal, or from other noxious gasses, that the early application of cold water has happily succeeded in producing reaction, after the common heating process had entirely failed. Therefore, instead of exposing the torpid body to the heat of a fire, or of a warm bath in a close room, he will allow the free admission of the open air, and apply snow or cold water, increasing the temperature by slow degrees, accompanied, not with violent rubbing, but very gentle friction. Instead of blowing into the nostrils the contaminated air of respiration, he will inflate the lungs, first with atmospheric, and afterwards with vital air. Instead of injecting the sickening, debilitating fumes of tobacco, he would convey into the stomach and bowels tepid water, and afterwards a portion of wine; observing from time to time, by the thermometer, the state of the internal temperature, increasing the means of excitement, by gentle degrees, from the milder to the more powerful, from the shower bath to the galvanic stimulus, the final test of vitality, or until signs of respiration or returning life should appear; when he would gradually diminish the means of excitement, carefully watching the progress towards recovery till all danger should be past.

Having in a former inquiry discussed this subject more at large, and submitted to the Royal Humane Society such improvements in the ordinary process, as the advanced state of medical science suggested, and experience justified, we beg leave only to transcribe the following passage, and for further particulars, respecting the extreme caution that is necessary in such a critical situation, refer our learned readers to the work itself.

"When this state of torpor or apparent death is brought on, whether in the marmot or the man; whether by the sedative effects of cold, or by submersion, the phenomena in both are extremely similar; both are bereft of sense and motion; both lose a large portion of animal heat; both are restored by a gentle degree of warmth, but destroyed by too great or too sudden heat; both on their first recovery exhibit similar efforts towards restoring respiration and circulation.

"If the recovery of the marmot is more uniformly certain, it is not only because in him the torpor is more gradual, but because the degree of heat is regulated by the steady unerring hand of nature; in man by the uncertain rules of art, or even by the caprice of the moment."*

Recapitulation and Conclusion.

From the preceding observations it seems reasonable to draw the following inferences:

1st. That the human frame is enabled to bear the extremes of heat and cold, and varieties of climate, beyond that of other animals; and that his reason gives him a decided pre-eminence over the whole brute creation.

2d. That men are the creatures of habit and early education: hence the importance of early discipline in training up young persons in habits of hardiness, and inuring them to bear the inclemencies of tempestuous seasons: hence also the numerous evils resulting from an opposite mode of education, introduced by fashion and modern refinements.

3d. That the animal and vegetable tribes are alike subject to habit, and may be gradually naturalized to a climate very different from their own, and trained by degrees to acquire new habitudes.

4th. That the effects of heat and cold being only relative, the extremes are not incompatible with health, in persons of firm constitution, though serious evils ensue from sudden transitions, where the body is predisposed by excessive excitement, or any other debilitating cause: hence, in persons overheated or fatigued, the frequent instances of syncope or sudden death, from drinking cold water, or the no less imprudent use or abuse of iced water or iced creams: hence also, the *coup de soleil*, apoplexy, phrenzy, or insanity, from sudden exposure to extreme heat; and hence the catarrh, rheumatism, or palsy, from sudden exposure to extreme cold. That the sudden excitement produced by ardent spirits, however exhilarating for the present, is more than counterbalanced by the subsequent languor and debility; hence the pernicious error of those who drink inebriating liquors to fortify themselves against the extremes of heat or cold, or the depressing effects of grief or anxiety.

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* See New Inquiry into the Suspension of Vital Action, 3d edition.

5th. That the torpidity of hybernating animals is a wise law of nature, and becomes periodical by habit, yet may be interrupted by art; that a slighter degree of torpor from the cold of winter pervades all nature, and that man is not wholly exempt; that sudden excitement, by heat or violent means, is destructive, and that nature points out a more safe and lenient method of reanimation.

6th. That in vital suspension, from torpidity, submersion, or whatever cause, the phenomena being similar, the principal indications of cure are the same: hence the feeble remains of vitality demand, that the plan of treatment should, in that critical situation, be carried on by gentle degrees of excitement gradually increased; that the cooling plan, in the beginning of the process, has been found more successful than that of artificial heat, or enervating fumes of tobacco.

7th. That the laws of nature are steady in adapting the means to the end, and therefore uniformly successful; while those of art are uncertain and capricious, and therefore often fallacious.

"Opinionum commenta delet dies naturæ judicia confirmat."

BACON.

IV.

An Account *of a case of* Strangulated Inguinal Hernia, *in a letter from* Lewis Heerman, *Esq. Surgeon of the United States Naval Hospital, New-Orleans, Honorary Member of the Physical Society of Guy's Hospital, &c. to* Valentine Mott, M. D. *Professor of Surgery in Columbia College, Corresponding Member of the Medical Society of London, &c.*

New-Orleans, March 23d, 1811.

My dear friend,

To gratify you, I have enclosed a faithful account of facts, as they occurred in the case of hernia, in which I lately operated. It will not, I am conscious, strike you for its novelty, since numerous and hopeless cases that have been recorded have terminated favourably; but since it is a standing practical rule of every celebrated school, and of the most experienced surgeons, that it is too late for the operation, when *tension and tenderness* of the abdomen unequivocally demonstrate the presence of peritoneal inflammation; and that it would be wanton cruelty to propose the operation, when the period at which *hiccup was first observed* had been allowed to pass without taking advantage of it; I conceive that exceptions to these general and well founded observations cannot be too numerous, in order to draw an inference from them collectively, in favour of operating. Whereas, without this support of living evidence on our side, the prudent, or rather the timid surgeon, would withhold his professional aid, and content himself by theorising passively on the cause of his patient's approaching dissolution.

It is with this view, my friend, that I offer it to you; and if, in the public situation to which your merits have elevated you, it can be made in any way useful, you are at liberty to do it.

With indelible sentiments of respect,
I am your affectionate friend,
LEWIS HEERMAN.

Valentine Mott, M. D. &c.

CASE.

Doctor Schoolfield, of the United States schooner Enterprise, informed me, on Tuesday, 23d May, that on the preceding evening he had been consulted on a case of strangulated inguinal hernia, by Dr. Dayer, surgeon's-mate of the United States frigate United States, and observed, that having found the abdomen tense and painful, and the patient to hiccup frequently, he had suggested to him the propriety (especially as the surgeon of the ship had not yet joined her) of turning the man over, as soon as possible, to the hospital at the navy-yard. Having been kept in waiting by this intelligence during the remainder of the day, without the arrival of the case at the hospital, I sat out in the evening, accompanied by my assistant, Dr. Blair, and went on board. Here I was informed by the assistant surgeon of the ship, that John Waters, a seaman on board, had applied to him four days ago, with a hernial protrusion into the scrotum on the right side; symptoms of strangulation, such as colic pain, eructation, vomiting, and costiveness, had attended it since its first occurrence; and he was observed to hiccup at intervals since yesterday evening, and to have much tension and tenderness of the abdomen. The patient had been bled copiously, so as to produce syncope, and the abdominal muscles in particular had been relaxed by posture, before any attempts had been made to reduce it: he had taken after that, calomel and opium; had laxative and tobacco injections given him, and cold applied to the groin and scrotum, without enabling Dr. D. to succeed with the taxis.

On seeing the patient myself, the doctor informed me, that the hiccup had become more loud and frequent during the day; that he vomited much oftener, and that the tension of the abdomen and tenderness on pressure continued unabated.

I found his pulse frequent, and rather tense, but not as small as, from accompanying appearances, I should have expected. The face and shoulders were covered with large drops of perspirable matter; his tongue was dry, and thickly encrusted with brown sordes, so as to make it rough and craggy; and the temperature of his extremities, though not of an icy coldness, was considerably below that of the trunk; the tumour itself was painful on being handled, and the integuments of it inflamed; but as yet it continued tense.

The means that had been employed having failed of success, the two gentlemen present urged the immediate performance of the operation, as the only possible chance by which he might be recovered from his impending fate. I concurred in their opinion, and confess that, with the exception of his pulse, I had nothing to hope from the operation.

The patient having been laid on a table, with his legs hanging off, the incision through the integuments was commenced, a little above the external abdominal ring, and carried along the whole of the tumour. The superficial fascia, the cremaster, and hernial sac, were subsequently divided, and could be readily distinguished from each other, in the progress of the operation, although it was by candlelight that I performed it. The effusion of serum within the sac was considerable, and the protruded intestine was a small fold of ileum. It was pressed upon considerably at the external ring, and this obstruction was removed by an incision upwards, through the tendinous fibres of the external oblique, without, at the same time, wounding the sac or cremaster, which had been left undivided to within one quarter of an inch of the external abdominal ring; but still the intestine could not be returned without dilating another stricture at the mouth of the sac, or internal ring, and which was accomplished, straight upwards, in the manner directed, and with the knife recommended by our old master, Mr. A. Cooper. The protruded portion had acquired a dark red colour, approaching that of chocolate; but gangrene not having as yet commenced, it was returned within the abdomen, and after having passed my finger around the edge of the mouth of the sack, without discovering any adhesion, the parts were laid together, and the integuments retained with three sutures, adhesive plaster, pledgets, and a T bandage. In about two hours and a half after the operation, he took one ounce of castor oil.

Second day of the operation, Wednesday. The castor oil opened his bowels last night; he slept for several hours, and feels better. His abdomen is less tense and painful on pressure, and his tongue is moist. There is nevertheless considerable fever; his cheeks are flushed, and he complains of pain in the hypogastric and right iliac regions. Directed him an effervescent draught every two hours, and a strictly antiphlogistic diet.

Third day, Thursday. He had an almost innumerable number of stools yesterday, but found himself relieved and lighter after every evacuation; the fever and restlessness abated in the afternoon, and he slept soundly during the greater part of the night; his tongue is still much furred and brown, but it continues moist; and his pulse, still accelerated in frequency, and fuller than natural, has not that contracted hardness in it that yesterday distinguished it.

Fourth day, Friday. He had two motions yesterday, and feels so much better this morning, that he craves more substantial food than that allowed him; but his abdomen is again tense; the lower extremities of an icy coldness, and every now and then he has an eructation from the stomach; his pulse likewise is more quick and frequent than it has been. On examining the wound, the plasters, from want of adhesive quality, had given away; they were therefore renewed, and the sutures removed. I directed also a flannel bag, filled with bruised chamomile flowers, to be frequently warmed, and sprinkled with spirits of camphor, to be applied to his abdomen; and his feet to be kept warm by hot and steaming bricks.

Fifth day, Saturday. Pulse is full and soft, and less frequent: his countenance has not that sallow and sinking appearance, nor is his abdomen equally tense, or the extremities as cold as they were yesterday; his appetite still exceeds his allowance, and in order to satiate it, he escaped the vigilance of the loblolly, and left his cot several times in search of food; had no alvine evacuation since Thursday. Directed an injection to be given him, with sulphate of soda and castor oil in it; he is likewise to continue the bricks and chamomile flower bag, and is to have some beef tea, in addition to gruel, sago, &c. and mucilaginous drinks.

Sixth day, Sunday. The injection of yesterday morning was repeated in the evening, but he had no fæcal evacuation before four o'clock this morning, and since that he had another at nine o'clock. The abdomen continues still tense in some degree, and the circulation in the lower extremities is yet feeble, although his pulse, as to frequency, force, and regularity, is perfectly natural. The wound does not look as favourable as it did on Friday; the lips are much thickened, inflamed, and separated; the surface has a sloughy appearance, and there is a good deal of hardness extending to some distance all along the incision. Laid aside the adhesive plasters, and applied emollient cataplasms.

Seventh day, Monday. Had two more motions since yesterday morning; but the tension of the abdomen does not yet entirely subside, and his pulse is much fuller than it was yesterday. Ordered him one wine-glass full, every three hours, of a mixture, prepared of ten grains James's fever powder, and eight ounces mint-water; and the inflammation about the wound requires the continuance of cataplasms and fomentations.

Eighth day, Tuesday. Two doses of the antimonial mixture excited the bowels sufficiently to discontinue it. The increased action of the pulse is reduced to a state below the natural standard; and no unfavourable symptom presenting itself, that would augur it an untoward indication, it appears more congenial to his present condition.

Ninth day, Wednesday. His bowels are kept soluble by occasional and small doses of the antimonial mixture; and the tension of the abdomen abates very visibly. The inflammation also of the wound is on the decrease, and a well defined line marks the extent of the sloughing, which is nevertheless very superficial.

Tenth day, Thursday. The sloughs are separating, and he promises in every respect favourably.

After this the rising granulations were dressed with dry lint, and the whole surface of the wound covered with a pledgit of simple ointment. Adhesive plasters were next employed to draw the edges of the ulcer nearer together. On the 19th day of the operation, I applied a truss, midway between the anterior superior spinous process of the ileum and pubis, and in eight days more, the wound cicatrized, and he was allowed to go to light duty.

OBSERVATIONS.

This man, whether from a morbid gastric secretion, or from habit, was a glutton; and, as far as I could learn, he had never before been sensible of any enlargement in the groin, until the morning of reporting himself, when he had monopolized the breakfast of two of his messmates, besides eating his own; and these circumstances in part account for the preference of purgatives, in the after treatment, to repeated bloodletting.

The violent antiperistaltic motion of the intestinal canal, together with the over distension it had suffered from crudities and from flatus, made it questionable with me, whether the tension and tenderness of the abdomen, after the operation, and the protracted constitutional commotion, proceeded entirely from peritoneal inflammation; and I have been induced to believe, that the increased irritability of the intestines from distension, rendered them more excitable to the performance of their natural functions, and particularly to the stimulus of the cathartics, and continued that tumefaction and soreness on pressure, which generally attend and succeed the most simple flatulent colic, where no inflammation is suspected to have supervened. The symptoms of the case, as I found it, will make it unnecessary in me to apologize for the omission of the warm bath, and for the neglect of an attempt to reduce the hernia by the taxis. The last method was altogether inadmissible, from the inflamed and painful state of the tumour; and the bath I conceived inferior to some of the means that had been already employed, in order to produce relaxation, independently of the objections that arose in my mind from loss of time, and the inconveniency and awkwardness that attends its use on shipboard, when not supplied with the proper apparatus.

V.

ACCOUNT *of an* EPIDEMIC DISEASE *which lately prevailed in upper St. John's Parish, in South Carolina ; by Dr.* JAMES MACBRIDE. *Communicated to Dr.* DAVID HOSACK, *by* THOMAS G. PRIOLEAU, M. D.

EARLY in the spring of 1808, nearly coeval with the disappearance of the influenza, there occurred, in upper St. John's parish, among negroes, some cases of typhus fever, of uncommon duration, and exhibiting unusual symptoms. At first these cases were few, and appeared to be confined to two or three plantations only; but as the season advanced, the disease extended itself, so that in July it was considered epidemic to a tract of country, embracing the greatest portion of the parishes of St. John and St. Stephen. This fever, which I consider to have been a variety of the typhus gravior of systematic writers, was very uniform in its aspects, from June to the succeeding October, when it became complicated with pains in the chest, and cough; and though these symptoms predominated in almost every case after the setting in of winter, the grade of fever remained evidently the same.

This form of disease prevailed in the above mentioned tract of country for two succeeding winters, to the almost entire exclusion of pneumonia vera. The experienced practitioner need hardly be told, that its effects were often fatal, and its treatment embarrassing. Those who became my patients, appeared to have laboured, for the first three or four days of their illness, under a fever of the common intermittent or remittent form, the paroxysms of which were preceded by chills, and attended by great prostration of strength, and severe pains in the head, back, loins, and umbilical region; to these succeeded, on the third, fifth, or seventh day, pains in the chest, and a dry distressing cough. These last named symptoms declared the disease to be formed; and it was not till after their appearance, and frequently after the use of depleting remedies, that my services were required. The pulse was peculiarly feeble, and often irregular and intermittent; exacerbation of fever rendered it more frequent, sometimes fuller, but never tense. On my first acquaintance with this disease, I was frequently deceived by the fullness of the pulse, produced by increase of fever, and felt authorized to let blood; but on raising my patient up, the pulse would immediately sink. Those conversant with an epidemic find, I presume, a diagnostic peculiarity in the pulse, which they cannot well express through the medium of language; in that of which I speak, the pulse was an immediate source of discrimination; it gave the impression of a disease of extreme debility.

The tongue was, in most cases, covered by a dark brown crust; its edges were of a fiery red; in the morning it was moistened by a viscid mucus; at night it was so dry as to render speech indistinct; frequently, when the patient made attempts to protrude it for examination, it cracked transversely and bled; when protruded, it was in a constant tremor, and what may appear remarkable, the patient, in numerous instances, would not retract it until repeatedly and loudly admonished to do so. In convalescence, the fur or crust cleared away first in the middle, and left the tongue marked for some time by two dark longitudinal streaks. In a few cases, the tongue wore a red and glossy surface; and I had occasion to observe, that this appearance marked cases of greater violence and shorter duration; the fauces were red, often apthous, and the teeth covered by a dark crust; the skin was ever hot and dry, but peculiarly so at night. To induce perspiration, by diaphoretics and the use of the warm bath, was often attempted, but scarcely ever with success. In two cases, where I drew blood on my first visit, with the hope of raising the pulse, a most profuse perspiration, during the flow of blood, suddenly covered the body, but did not prove critical.

I did not observe, that either costiveness or a disposition to looseness characterized the state of the bowels; but in the typhus of the preceding summer, a violent diarrhœa was a frequent, and often a fatal occurrence. The stomach was seldom or never affected by nausea, indeed it seemed to lose its excitability to those articles which are employed as emetics, for ipecacuanha and others of that class would prove sufficiently emetic in the forming stage of the disease, but if exhibited afterwards, they generally passed off by stool. Green or dark coloured, and highly offensive stools, were usually procured by cathartics.

Delirium was not a common symptom; in many fatal cases it was never observed, yet the intellectual faculties were evidently blunted; the patient seemed slow to apprehend your meaning; it was necessary to repeat your questions often, and slowly, before you received a reply. Those in whom the chest affection predominated less, and the disease approached nearer to pure typhus, complained much of noise in the head, and deafness. Difficulty of hearing, and impaired vision, were long attendants on several who recovered.

The pains in the chest were fugitive, and could not often be distinctly pointed out; under the clavicles they were first felt, and then, in turn, they seemed to invade every part of the thorax, and often the shoulders. The cough was dry, and so distressing at night, as to exclude rest altogether; it was accompanied by little or no expectoration, except in the morning, when a viscid and frothy mucus was with difficulty thrown off. In a few instances only did I find it streaked with blood. In two old persons, expectoration was rather profuse, of the consistence of saliva, and deeply tinged with yellow. Respiration was seldom laborious or oppressed. The exacerbations of fever were, in some measure, agreeable to the double tertian type; but, in many cases, it was impossible to make any discrimination of this nature; an increase of fever about dark, and an imperfect remission after four in the morning, were alone to be observed.

No disease seemed so little under the influence of critical days as this, after it was formed; nor could the physician ever speak with any certainty of prognosis, crisis, or even convalescence. Its duration was extraordinary; those who recovered were seldom free from cough and fever, under five or six weeks, and debility and emaciation were protracted to a much longer period: some died within a week from the attack of the disease, and others after the thirtieth day.

The expression of pain was generally marked on the countenance; but no complaints were made, not even that of thirst, after the complete formation of the disease; previous to this period, however, much pain was expressed.

A sudden change in the temperature of the atmosphere, from heat to cold, exerted a baneful influence over persons in every stage of this disease; in those recently attacked, it hastened the invasion of the pulmonary affection, and blasted the hopes which had been entertained of the convalescence of those who had suffered long. In the forenoon of a warm and calm day, I have left my patient sitting up, with a brightened countenance, and taking food with an apparent relish; when the sudden springing up of a northeast wind, and consequent bad weather, would consign him to the grave before twenty-four hours could elapse. More died in the months of March and April, 1809, than during the whole period of its prevalence.

Those who appeared most liable to the attacks of this disease, were field negroes, from the age of twelve to forty; and though fatality seemed the more certain in proportion to the advancement of age, yet the most youthful were victims.

Among white people of the lowest class, I met with cases of this disease, precisely similar to its appearance among the blacks; but, in persons accustomed to a generous diet, the disease wore a different aspect, partaking little or none of the chest affection. A case of the latter denomination terminated fatally on the seventh day; the first source of complaint was a violent pain in the left hip, with a slight fever; a few hours before death the body was covered with livid blotches.

When an individual of a family was attacked by this disease, it was expected that every member of it would sooner or later become sufferers, nor was this expectation often fallacious; in several instances I saw it prevail for months under the same roof, while an adjacent family, a few yards distant, were entirely exempt. In like manner some planting establishments suffered greatly, while others in view did not furnish a case. In the typhus of the preceding summer, this trait in the progress of the disease was more strikingly exemplified.

For obvious reasons, I do not intend to detail here, the mode, or rather modes of treatment, I pursued in this disease, during the first winter of its appearance; I had too often the mortification of seeing my exertions prove unavailing. The disease, when once formed, ran its course unmolested; its morbid associations were so strongly catenated, and the system rendered so inexcitable, that medicines, even the strongest stimuli, did not produce their usual effects. When my patients did recover, I could not often congratulate myself that my prescriptions had been very instrumental.

In one of the last cases of unmixed typhus, which occurred in the autumn of 1808, I employed the cold affusion, for the first time in my life, agreeably to the principles established by Dr. Currie of Liverpool, and though the case seemed so desperate as to exclude every ray of hope, the speediest and happiest advantages were derived. I had scarcely felicitated myself in the prospect of now being able to combat typhus more advantageously, when the chest affection appeared. During the disheartening and embarrassing scenes of the succeeding winter, when feeling the low and frequent pulse, and the hot and dry skin of my patient, the idea of the employment of the cold affusion often recurred to me; but no precedent for its use, where the chest was affected, offered; I say no medical precedent offered, for Dr. Currie merely suggests his belief, that the objections to the use of the cold affusion, in pleuritis and peripneumonia, were not insurmountable; but adds, that his experience neither invalidates nor strengthens this opinion. To establish its validity the following cases are recited:

On the 5th of May, 1809, I visited a negro man of twenty-five years of age, in the seventh day of an illness, which I readily recognized to be the same with that I have above described. His pulse was feeble and frequent; his skin hot and dry; his tongue and his teeth covered by dark inspissated mucus; he was coughing incessantly without expectorating. His disease had been considered pleurisy, and had been treated as such; he had been twice blooded; often blistered; he had taken cathartics, and I found him taking decoc. rad. senekæ with vin. antimon. He was in a state of extreme debility, and delirious at night.

I recommended that he should have, during the remission of his fever, which was not very distinct, a decoction of Peruvian bark, eupatorium rotundifolium, and seneka, with elixir of vitriol; also, a moderate portion of Madeira wine, and as much fluid nourishment as he could take. At bed time, he was to have ipecacuanha, and tinct. thebaic, in due proportion; pediluvium, and spt. sal. ammon. vol. was directed to be given every third hour, in doses of twenty drops; and each dose was to be followed by a draught of warm wine whey. Due attention was paid to his bowels, which, previous to my visit, were too loose.

From business, and the distance of my place of residence, I was prevented from seeing my patient until the evening of the 7th of May; he was worse: he seemed weaker; his speech was so indistinct I could not understand him; every movement he made was attended by tremors; his skin was burning hot, and the cough, though not worse, was extremely distressing; in short, I had every reason to believe that my patient would soon fall a victim to the disease, unless some vigorous and successful effort could be speedily made to promote a crisis. The application of cold, in my view, appeared most likely to effect this purpose, and its use was resolved upon. A sheet was dipped in the coldest water that could be procured, and agitated in the air by two persons, to render it still cooler, and suddenly wrapped around the patient, who lay naked, for he was unable to sit up. As soon as the first sheet had lost its coldness, another was prepared, and applied in like manner. The patient expressed great pleasure at the application, although he had been apparently delirious just before, and desired its repetition; he was gratified until he began to shiver, when he was rubbed dry by warm woollens, and wrapped up warm.

A profuse perspiration immediately broke out; he expectorated freely, which he had never done before, and fell into a profound sleep. The applications had been made at dark, or a little after, when his skin was hottest; about midnight he grew hot and restless, and the cough became dry and troublesome; the application of cold was repeated, and followed by effects equally salutary. On the day following he was so much better, that my services were no longer required. I was afterwards informed by the intelligent nurse of the plantation, that on the two succeeding nights the fever rose about dark, but that a single sheet relieved him each time. The following cases render it probable, that the cold affusion would have proved highly beneficial in many cases of this disease, which occurred during the winter; but in none had so many causes concurred leading to the adoption of it, as in that just recited; some were of a peculiar nature, not arising from the case alone, but tending to soften the imputation of temerity, which I must have incurred had the case proved fatal.

I saw no more cases of this malignant peripneumonia this spring; typhus again appeared, and prevailed unmixed, until the succeeding November. I should remark, that the epidemical constitution of the summer of 1809, varied so much from that of 1808, that the fatal diarrhœa alluded to above, and which might have been an obstacle to the employment of the cold affusion, was not attendant on the cases of nervous fever which I saw this summer. I employed this remedy in every case where it was admissible, and every application enhanced my opinion of its efficacy.

On the evening of the 26th of November, while visiting a convalescent case of typhus, in a negro boy, I was requested to see his mother, aged fifty, who had been his nurse. I found her, and another son of twenty-five or thirty years of age, in the same room, and both in the third day of their illness. From the pulse, tongue, pains in the chest, and cough, I recognized the disease of last winter, and no milder in its appearance. The prominent features of each of these cases were the same, except that the woman referred her pains to the shoulders, and space between them, rather than to the chest; the man his, to his chest and back. They had each taken ipecacuanha and antimonial wine, which had produced, to a sufficient extent effects both emetic and cathartic. The man being robus and having often been the subject of pleuritis, of a form whi required the lancet to a great extent, I drew from his ar about eight ounces of blood; the blood was of an arterial pearance, and I should have said it exhibited the same winter.

The third and fourth days passed away without any alleviation, but with an aggravation of their sufferings. Blisters had been applied; decoction of serpentaria, with antimonial wine, warm diluent drinks, pediluvia, &c. &c. had been prescribed and administered; but, notwithstanding, it appeared altogether probable, that these cases would run the same fatal course I had so often witnessed last winter. On the morning of the fifth day of their disease, in the exacerbation of fever, when the pulse was feeble and frequent, the skin hot and dry, and the cough incessant and dry, I had cold applied to both, in the same manner as related in the foregoing case, and effects equally desirable were produced. A more violent fit of coughing immediately succeeded the application of cold, but as soon as perspiration appeared, which it did profusely, and for the first time since my attendance, expectoration became free, and the cough was relieved. Towards midnight the man became hot and restless, when the application was repeated with great advantage. On the morning of the sixth day of their illness, I took my leave, having recommended a tonic plan.

The man was hurried on to greater debility by loss of blood; his pulse did not warrant it as much as I could have wished. To evince the efficacy and safety of the cold affusion in the latter stages of pleurisy, when the inflammatory symptoms have yielded to those of an opposite diathesis, the following case, of recent occurrence, is related:

December 9th, 1811, I visited a negro boy of seven years of age, who had been attacked, three days before, by a violent catarrh, accompanied by fever. The disease had now extended itself to the chest; a fixed pain was pointed out; he wa[illegible] a violent cough, producing froth streaked with blood, and on t[illegible] unable to rest; his pulse was tense; his tongue furred, a sin[illegible], with red edges, and his skin was alternately moist and rende[illegible] hot and cold. I immediately let blood, in quantity highly [illegible] to the age of my patient, and it shewed the inflammatory crust. I then prescribed an emetic of ipecacuanha and antimonial wine, which was to be succeeded by a blister, and a purgative of pulv. antimonialis, cream of tartar, and jalap, if necessary.

December 10th. My patient was much better; I prescribed a decoction of seneka and antimonial wine, and I was not called upon until the 12th of December, when I found that the child had, during the last night, experienced a recurrence of its former symptoms; but the pulse had lost its tension, it was more frequent, and the cough was dry. A blister was applied, and an emetic recommended.

On the evening of the 13th December, I saw my patient. The emetic and blister had produced no permanent advantage, and I considered the case a very unpromising one. Respiration was not so free as to leave me without some doubt as to the propriety of the use of the cold affusion; but relying on the well known sympathy which subsists between the internal surface of the lungs and the skin, and feeling assured, by former experience, and from the present state of the skin of my patient, that profuse perspiration would immediataly follow the use of the cold affusion, I resolved on the application of it. I had the child stripped, brought without the doors, and emptied over it a pailful of cold water; it was immediately rubbed dry, and covered up warm.* Difficulty of breathing followed the application, but in a few moments, profuse perspiration ensued, and a mouthful of viscid mucus was expectorated at one effort; the lungs were soon relieved; the skin continued moist. But one visit was paid afterwards.

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* In March, 1810, I prescribed the cold affusion, in the case of a boy of fifteen years of age, with the malignant peripneumony. The application was made just after dark; perspiration and other beneficial effects were produced, and on leaving my patient, I directed the nurse, who was more stupid than I suspected, to repeat the application about midnight, should he grow restless and hot, but not to do it unless the skin was very dry. About twelve o'clock, the application was made, when the skin was moist; an alarming oppression was the consequence; I was called up, and procured relief by the exhibition of an emetic.

St. Stephen's Parish, S. C. 30th April, 1812.

VI.

Tabular Views *of the altitudes of the most elevated* Mountains *in several districts of the* United States; *drawn up from Barometrical and Thermometrical Observations made by Capt.* Alden Partridge, *of the Corps of Engineers, Professor of Mathematics in the Military Academy at West-Point, &c. Communicated to the Editors by Col.* J. Williams, *President of the United States Military Philosophical Society, &c. &c.*

Gentlemen,

Capt. Partridge, of the corps of engineers, has communicated to the United States Military Philosophical Society, the altitudes of the most elevated parts of the White and Green mountains in the state of New-Hampshire, which I enclose to you in the form of a table.

On a particular examination of his barometer, Capt. Partridge has found the graduations to be in French measure; the results in his former tables* should therefore be corrected, by the addition of one fifteenth of the altitudes, which is the difference between the French and English inch nearly.† To put the whole in one point of view, I have corrected the former tables, which you have also enclosed.

I am, your obedient servant,

JONATHAN WILLIAMS.

New-York, May 1, 1812.

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* See the Register, vol. 1, p. 337, &c.

† 1 inch French equal to 1.654 inch English.

The altitudes of the most elevated parts of the White and Green Mountains, in the state of New-Hampshire; calculated from barometrical observations, in the month of July, 1811.

WHITE MOUNTAINS.

	ALTITUDES IN FEET.	
NAMES.	above the sea.	above their bases.
Mount Washington,	6,600	4,712
1st south of Mount Washington,	5,693	3,805
2d do. of do. do.	5,393	3,507
3d do. of do. do.	5,190	3,302
4th do. of do. do.	5,025	3,137
5th do. of do. do.	4,646	2,758
Base of the Mountains,	1,888	0,000
GREEN MOUNTAINS.		
Kellington Peak,	3,924	2,994
Base of the Peak,	930	0,000

Altitudes of some of the mountains in Virginia above the level of tide water.

	FEET.
1. The highest point of the Blue Ridge, near Rockpit Gap,	1,908
2. The foot of the Blue Ridge on the western side,	395
3. The summit of the first Mountain, near the Warm Springs,	2,018
4. The summit of the second Mountain, near the Warm Springs,	2,380
5. The summit of the Alleghany Ridge, about six miles east of the Sweet Springs,	2,988

The altitudes of the highest Mountains at and near West-Point, state of New-York.

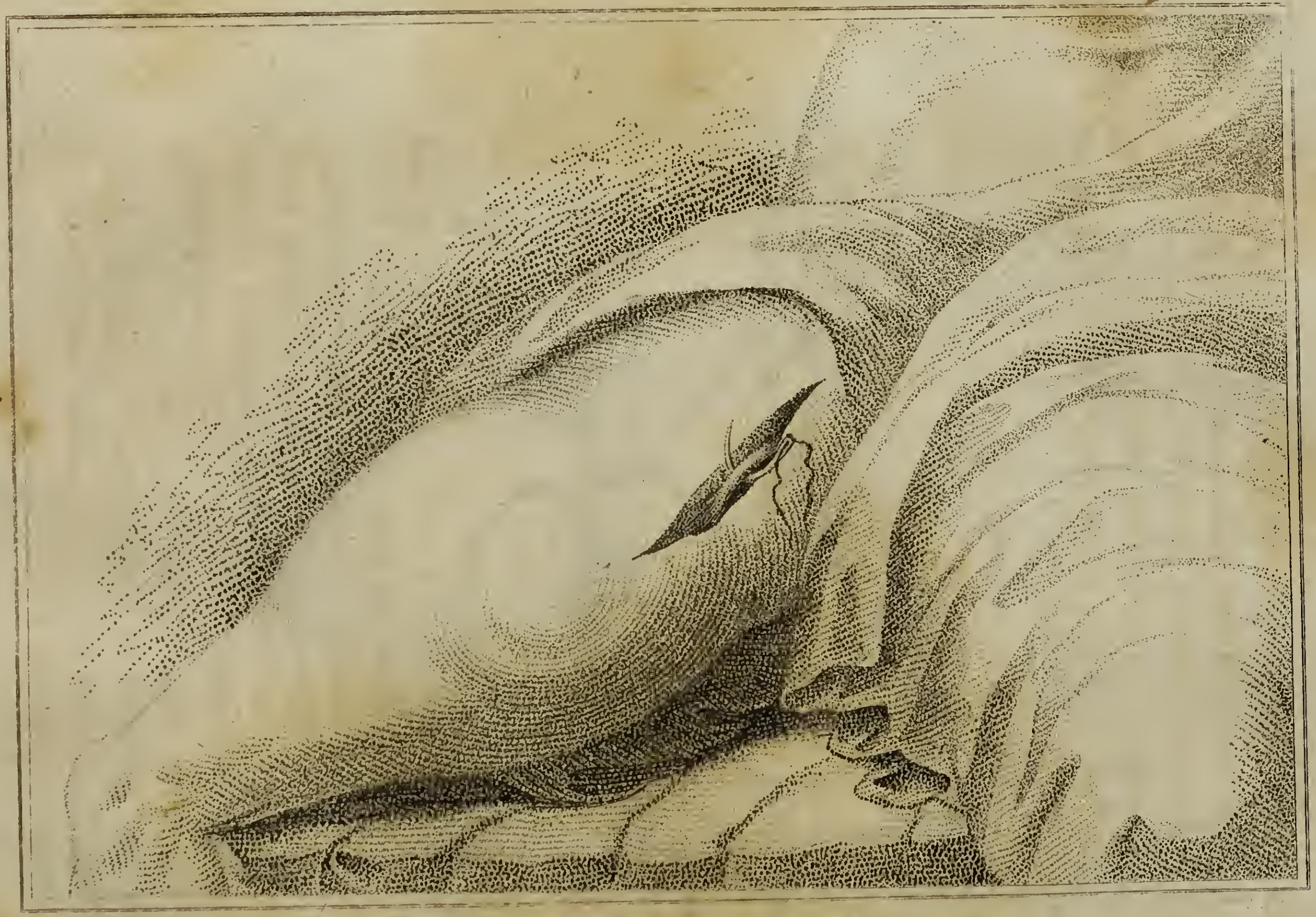
NAMES.	ALTITUDES IN FEET. above the sea.	above their bases.
Crows Nest,	1,418	0,000
Butter-hill,	1,527	0,000
Fort Putnam,	598	0,000
West-Point Plain,	188	0,000
Bull Hill,	1,484	0,000
Old Bacon,	1,471	0,000
New Bacon,	1,585	0,000
Anthony's Nose,	935	0,000
Sugar Loaf,	866	0,000
Break Neck Hill,	1,187	0,000

N. B. These mountains descend to the level of tide water on the North River; this therefore is considered as their base.

* * *

The altitudes of the most elevated Catskill Mountains, lying in the town of Windham, county of Greene, state of New-York.

NAMES.	ALTITUDE IN FEET. above the sea.	above their bases.
Round Top,	3,804	3,105
High Peak,	3,718	3,019
Highest part of the turnpike,	2,425	1,736
Base of the Mountains,	699	0,000
Altitude of the round top above its own base,	1,653	0,000
Do. of the high peak do. do.	1,568	0,000
Whole altitude of the high falls,	330	0,000
Altitude of the first fall,	203	0,000
Do. of the second fall,	127	0,000



Aneurism of the Femoral Artery

VII.

CASE *of* ANEURISM *of the* FEMORAL ARTERY: *communicated in a letter to* JOHN ABERNETHY, *Esq.* F. R. S. *Assistant Surgeon of the St. Bartholomew's Hospital, London, &c. from* DAVID HOSACK, M. D. *Professor of the Theory and Practice of Physic and Clinical Medicine in the University of New-York.*

(With an Engraving, by Leney.)

Dear Sir,

IT is a remark of one of the most distinguished surgeons of the present day, Mr. John Bell, "that in the operation for aneurism of the thigh, more perhaps have died than have survived it." In the manner of conducting the operation, there is also great difference of opinion, among the most celebrated surgeons of Europe. These facts render it necessary and proper to record every case in which this important operation has been performed, the manner in which it has been conducted, and the result of the case.

Influenced by these considerations, I enclose you the minutes of a case which fell under my care, during my attendance as one of the surgeons of the alms-house of this city, and which I am happy to add has terminated successfully.

John Spencer, a native of Germany, thirty years of age, came into the alms-house, about the twentieth of March, 1808, on account of a tumour of his right thigh, attended with pain and lameness, by which he was rendered incapable of pursuing his ordinary occupation, that of an oysterman.

Upon inquiring into the history of his complaint, it appeared, that his disease came on spontaneously about the first of February preceding; that he had sustained no previous injury to which it could be ascribed, unless the circumstance of a waggon having passed over his thigh, about fourteen years ago, could be supposed to have had any agency in giving origin to his disease. The first symptom which he discovered of his complaint, was a small hard tumour about the middle of the thigh, which he perceived upon rising out of bed in the morning; in a few days, it evidently increased in size, and the pulsation became so considerable, that it was apparent to the bystanders. It then gave him no pain; but in about seven weeks from the time of its first appearance, the tumour became so large as to extend nearly to the knee, and almost as high as where the profunda leaves the femoral artery. It then produced a sense of numbness throughout the whole limb, and such a degree of pain in the part as deprived him of rest. The tumour also had acquired such magnitude, that, on the twenty-ninth of March, the pulsation was only to be perceived by the most attentive examination, and then only by grasping the tumour with both hands. The tumour also, at that time, assumed a somewhat purple colour, and, in one part, was much more elevated and elastic, and in some degree appeared as if the aneurismal sac would soon be ruptured. From its diffusing itself entirely around the thigh, there can be little doubt of a rupture of the coats of the artery. His health had become much impaired, his countenance pale, his pulse small and weak, and his extremities, excepting the part affected, much diminished in size, and his whole body considerably emaciated.

The nature of the disease being ascertained, and the tumour sensibly and daily increasing, a consultation was called the succeeding day, at which all present concurred in opinion, that the situation of the patient rendered it necessary that the operation should be performed as soon as possible. Accordingly, the following day, the 31st, was appointed for the operation. The patient's bowels were directed to be emptied by an injection, and afterwards an anodyne of one hundred drops of laudanum to be given him an hour before the time of operating.

In conducting the operation, Dr. Post, the Professor of Anatomy and Surgery, in Columbia College, gave me his assistance, by compressing the artery as it passed under Poupart's ligament; for the small space between the tumour and the groin did not allow of the application of the tourniquet. An incision was then made through the integuments, about six inches in length, in the direction of the sartorius muscle, at its inner edge, beginning about two inches from the groin. The sheath enclosing the muscle was then divided, and the muscle pressed aside. I then slowly divided the cellular membrane (scarcely to be called fascia) covering and enclosing the vessels; and with my fingers readily detached the artery from the vein and anterior crural nerve, and passed the needle probe with a strong double ligature beneath it. The ligatures were then tied, leaving about an inch between them, and the artery divided between the ligatures; but the division of it was made nearest the lower ligature, with a view to prevent the accident that has sometimes occurred, of the ligature being thrown off by the force of the artery. On this account particular attention was given to the manner of securing the artery. Great care was also taken not to separate it from its connexions, farther than was absolutely necessary to pass the probe beneath it and to apply the ligatures; lest any unnecessary separation should lessen the chance of union of the sides of the vessel before the ligatures might separate. In the hands of the English surgeons it has, in several instances, occurred, especially in those cases where the artery was left undivided, that ulceration took place, and the ligature separated before the sides of the vessel were united, in which case the patient was destroyed by hæmorrhage.

But by cutting the artery between the ligatures, as recommended by you and by Mr. John Bell, it retracts as after amputation; and its connexions being preserved, the union is as readily effected between the sides of the vessel in the one case as in the other. It may be proper here to remark, that the artery was secured about an inch above the tumour, which was left to be absorbed, and that the upper ligature was made so high that there was probably little more than half an inch between it and the profunda. Another circumstance worthy of notice is, that the pulsations of the artery near the tumour were unusually feeble; whereas the other vessels beat with their usual force, as also did the femoral artery, where it passes Poupart's ligament.

The artery being secured, the sides of the wound were brought together and retained by strips of adhesive plaster, covered with lint and a light compress, and the whole supported by a flannel roller; the patient was then conveyed to his bed, and his limb placed in an easy relaxed posture, with a pillow underneath his thigh to preserve it in that position. The next day a great increase of heat was perceived about the wound, but the lower part of the limb was much colder than natural, and not the least pulsation was perceivable in any of the arteries below the tumour. The limb was then bathed with spirits, and wrapped in warm dry flannels which were frequently renewed.

On the fifth day from the operation, the wound became somewhat offensive; the dressings were removed, when it was found that an adhesion had taken place the whole extent of the wound, excepting the part immediately adjacent to the ligatures. The limb was also considerably warmer than on the second or third day after the operation, but had not yet acquired its natural temperature. Having cleansed the parts first with soap and water, and afterwards bathed them with spirits, the plasters and compress were renewed, and the roller applied as before. The wound was from that time dressed daily, and the whole limb washed with spirits: as early as the ninth day, the diminution of the tumour was apparent. On the 12th of April, i. e. the thirteenth since the operation, the ligatures came away; and on the seventeenth, a very feeble pulsation was perceived in the posterior tibial artery, and the limb was restored to its natural temperature. He was then put upon the use of bark and a nutritious diet. In a short time his general health was so much improved, that he walked about the house without the least pain or inconvenience. The tumour continued to decrease rapidly, and the wound healed without the least impediment of any sort.

The limb was still washed with spirits, and the roller applied as before, with the view to increase the tone of the parts, and to promote the absorption of the contents of the tumour.

The 22d of June following, he called to see me, with a request to be discharged from the alms-house, and to return to his business. He had entirely recovered his strength, the circulation appeared perfectly restored in the limb, and the tumour so inconsiderable, that upon measuring the circumference of the thigh, at the part where the tumour had been most apparent, there was but one inch difference between it and the corresponding part of the other limb. He was accordingly discharged, with the direction to lay aside the bandage, and daily, for some time, to bathe the part affected with cold water.

I am, dear Sir, with great respect and esteem, yours,

DAVID HOSACK.

[The man whose case is related above, again called upon me, a few months since, remaining in good health, and enjoying the perfect use of his limb. He informs me, that since the operation he has walked from this city to Philadelphia, and that his first day's journey was thirty-five miles.]

New-York, June 18th, 1812. D. H.

REVIEW.

Art. I. *The* History *of the* Plague *of* Athens. *By Dr.* Elihu H. Smith. [From the New-York Medical Repository, vol. 1. 1798.]—*Communicated by a Correspondent.*

The essay which we propose to examine, stands first in the pages of the Medical Repository, and was written to prove the domestic origin of the Athenian plague. The author entertained an opinion, that all epidemics have one common origin, and arise in circumstances nearly similar; and, for the purpose of fortifying this opinion, he had intended to write a series of essays, upon all the epidemics which have ever appeared: as the essay upon the plague of Athens is the only part of this magnificent design which has been finished, it may not be amiss to consider it as a specimen of all the rest, and, as such, to give it an attentive examination.

The performance of Dr. Smith is divided into two sections, the first of which contains a general account of Attica, stating the soil to be light and barren, the climate variable, the diet poor, the dress very warm in winter and very cool in summer, the horrors of domestic slavery somewhat softened, and the stagnant waters numerous. The city of Athens itself is described with much greater minuteness; not a quarter of any note, hardly a building of any consequence is omitted; and indeed this part of the section exhibits an unrivalled specimen of topographical accuracy, which none can justly appreciate, but those who remember, that the author not only describes a city which he never saw, but, as it was at an æra in which he never lived, thousands of years ago: when Pericles acted, and (what our author seems to have overlooked) when Thucydides wrote. It only remains to observe, that, according to this new discovery, the city of Athens, far from being the capital of a refined and elegant people, was an habitation fit only for the vilest of mankind, the seat indeed of plague, pestilence, and famine, infested by wild beasts, offensive with putrefaction, and filled with every possible variety of wretchedness and misery. Let those who have associated other ideas with the remembrance of that famous city, no longer indulge the pleasing delusion, but sacrifice it instantly to this imperious truth; and if any have imagined Thucydides to be no less intimate with his native city than Mons. De Pauw, or the editors of the Medical Repository, let them learn their error, and discredit his partial assertions; " that owing to the greatness of their city, the Athenians enjoyed not only their own peculiar pleasures, but had easy access to the enjoyments and luxuries of all other men."* And believe him still less, when he fondly declares, that by " private splendour and public amusements they blunted the sense of their calamities."† It is easy to account for this monstrous picture of the misery of Athens; for if the reader be not prepared to attribute substance and reality to this " phantasma, this hideous dream," and to esteem no scourge too dreadful for a place so loathsome, he cannot accede to the doctrine of our author. The section concludes with a remark upon " the relation apparently subsisting between the plague of Athens, and the state of the citizens as to vegetable supplies."‡ This relation, " deemed by the author too curious and important to be lightly passed over," is happily illustrated by a table, erroneous in the dates, which are the only parts in it of any importance; for, according to this table, the plague broke out in the spring,‖ but, according to Thucydides,** in the summer.

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* Lib.2. c. 38. † Ibid. ‡ Med. Rep. v. 1. p. 18. ‖ Med. Rep. v. 1 p. 18.
** Lib. 2. c. 47.

Such, in point of accuracy and historic truth, is the first of these two sections. It will be scarcely necessary for us to state our belief, that this attempt to render probable the existence of local causes in Attica, is wholly unsuccessful; that it is ludicrous in the extreme for any man at this day to designate the position of every marsh, fen, and pool that surrounded a city, so many centuries ago, while not only the general face of nature is perpetually changing, but this particular city has undergone many vicissitudes, and been the prey of many different conquerors: particularly difficult would this attempt be to one who, in his very outset, complains of the want of evidence, and pathetically laments, "that few, even of the slender memorials that do exist," have ever been perused by him.

The second section commences with the following question: "Whether the plague was imported or of local origin?"* And the essay goes on to state "that it indeed appears from Thucydides that a report prevailed in his time that the plague originated in Africa, and was imported into Athens. But from the manner in which this report is noticed by the historian, it may be inferred that the thought is entitled to very little regard." "Great stress," it is added, "is not to be laid on argument like this." This is certainly true, it merits not the slightest consideration, for if to mention cursorily be a proof of little regard, not to mention at all, must be a proof of total contempt, and there is not in Thucydides even a hint of domestic origin. Poor, however, as this argument is, it is yet stated in the most strong and favourable manner; for the Grecian historian does not say, in general terms, that the plague originated in Africa. Instead of naming this immense and unknown continent, he mentions the particular districts, lays his hand on the spot, and thence following its progress, he treads in the very footsteps of the disease. Let him speak for himself:

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* Med. Rep. v. 1. p. 19.

"The plague, as it is said, began first in Æthiopia, back of Egypt; it then descended upon Egypt, Lybia, and a great part of the King of Persia's territories. But upon the city of the Athenians it fell suddenly; *upon the Pyreus first;* so that the Lacedemonians were suspected of having poisoned the wells, there being no spring at that place. *Afterwards* it came upon the city above, (Athens,) where the mortality was much greater."*

This is something more than slight mention, something too detailed, too much dwelt upon, too minute for an unheeded report. Had he described the organization of an army in Æthiopia, composed of a nation unknown, their descent upon Egypt, their march through Lybia, and the territories of the Persian King; their embarkation and temporary disappearance, until the "*sudden fall*" of their victorious bands upon the sea-port of Athens, he could have used no other terms than those in which he has marked the origin and traced the progress of this fatal disease. Those who are familiar with Thucydides will, I think, have observed that in this part of his history, the two events in which he seems to have been most interested, are the siege of Platæa and the Plague of Athens. He has described both with a degree of particularity and detail very unusual with him; and, it may therefore, I trust, be safely presumed that he took more than common pains to acquaint himself with the facts. If he may be admitted to testify in his own cause, few will infer, with the writer in the Repository, that he thought his account entitled to "very little regard." "I have not thought proper, says he, to relate the events of this war, as I might happen accidentally to hear them, nor even as they might appear to me to have happened, but with as much accuracy as lay in my power; I have investigated all, as well those at which I was present, as those which I took from others."* At any rate, whether true or false, if cited at all he should have been cited correctly: where so much is to be collected from an author's manner, to dispose of his account by words of general import is uncandid, and perhaps to a very scrupulous man, aware of the importance of his subject to the lives and happiness of his fellow citizens, it might even seem to merit a much harsher epithet. What renders this proceeding more particularly suspicious is, that in this stage of the question, Thucydides and his countrymen are abandoned as persons who, though "eminently sagacious, cannot fairly be supposed to have considered this subject with philosophical precision." A plan is accordingly substituted, which unites both these advantages, exhibiting to the world a method of argument, at once eminently sagacious and philosophically precise. And this plan is "*carefully* to enumerate all the circumstances connected with this memorable calamity."† After pompously professing to rely principally upon the authority of Thucydides, is it not a little singular that this author should desert him at that nice moment, when his authority was most wanted? and substitute, in its place, a plan of his own, to which there are so many and so strong objections? Eighteen in number are these circumstances, and of one convert at least they may be sure, for the reasoner is pleased to give it as his decided opinion, "that a due consideration of them cannot fail to impress an entire conviction of the domestic origin of the Athenian plague."

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* Lib. 2. c. 48.

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* Lib. 1. c. 22. † Med. Rep. vol. 1. p. 20.

Let the boasted efficacy of these circumstances be tried, without any terror at their number, or the confidence with which they are produced—

> Telephus et Peleus, cum pauper et Exul uterque
> Projicit ampullas et sesquipedalia verba.

The first ten relate entirely to the peculiar situation of the city of Athens, and are from their very nature inapplicable to any other place. It follows, therefore, that where these causes did not exist, the plague would not have appeared. But according to Thucydides, (who describes the progress of the plague as he would the course of a ship,) "the plague is said to have *touched* at Lemnos and many other places."* The consequence is not easily avoided; either the ten champions must be left to their fate, or the work of "*entire conviction*" must begin anew, and the island of Lemnos, though at a great distance, and in a different latitude, must be shown to be similarly situated to the city of Athens.

11*th.* *Circumstance.* "Like other epidemical diseases, the plague converted every thing into itself, or banished it during its own continuance."—This is confirmed by Thucydides.

12*th.* "It was fatal to domestic animals as well as men, and all wild animals shunned the city during its prevalence."

The above is asserted upon the authority of Thucydides, and we must express our astonishment, that any person acquainted with the passage, would imagine that the idea of a foreign origin was diregarded by the author. As translated by Mr. Hobbes, the passage in question is literally thus:

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* Lib. 2. c. 47.

"For this was a kind of sickness which far surmounted all expression of words, and both exceeded human nature in the cruelty wherewith it handled each one, and appeared also otherwise to be none of those diseases that *are bred among us*, and that especially by this; for all, both birds and beasts, that use so to feed on human flesh, though many men lay abroad unburied, either *come not at them, or tasting perished*."*

13*th*. "It affected the Athenians only when carried by their troops into other countries, and was never propagated into any other state than theirs, not even into the contiguous towns of Peloponnesus and Bœotia, notwithstanding the numerous rencounters of the hostile armies."†

The above sentence contains three distinct and positive assertions, (not one of which is true) each tending to strengthen one conclusion, that the plague was not contagious, and could not therefore be imported. As this is a point, about which the assertions of this essay are very positive and dogmatic, we shall briefly state the reasons which induce us to be of opinion that the plague of Athens was a contagious disease. It is expressly so stated to be by Thucydides,‡ the author upon whom the Medical Repository principally relies. More Physicians§ died than of any other profession, because, says Thucydides, they were more exposed to the disease. If then the plague had been engendered in Attica, it would have seized upon all alike, and it never would have been a subject of particular remark that members of one profession died rather than of another. The plague first appeared in the Pyreus,¶ *the sea-port of Athens*; the Pyreus is four miles from Athens. Had it not been contagious it would there have remained; had it not been contagious, troops departing from Athens with the disease could never have infected others at a place so distant as Potidæa; and had its poison been incommunicable the animals that devoured the dead bodies would not have died.* We return to the examination of the 13th circumstance, which, as we have stated, contains three separate assertions. "It affected the Athenians only when carried by their troops into other countries." If this has any meaning, it probably means that there was something in the Athenian constitution that rendered them, and them alone, liable to the disease, in whatever part of the world they might happen to be. If this be the case, what becomes of the ten local causes so much insisted on? "And was never propagated into any other state than theirs, not even the contiguous towns of Peloponnesus and Bœotia." This the author allows to be against the authority of Plutarch, and the following passage shows that it is expressly contradicted by Thucydides. "Athenian troops were before the city of Potidæa; fresh troops under Agnon went from Athens to assist their countrymen in the reduction of that place; but they did not succeed, for the plague grievously afflicted them, and destroyed their army, so that those also who had been there before and *in perfect health*, took the disease from the soldiers under Agnon."† Here is an instance of its propagation into another state, supported by his own witness, told in the plainest terms, reflecting back at once the charge of "*absurd dogmatism*,"‡ where alone it is due, and vindicating the assertors of an imported contagion. The authority of Plutarch, we are informed, would in this particular have been disregarded, even if Thucydides had not elsewhere expressly asserted " that the plague was never propagated into the contiguous towns of Peloponnesus and Bœotia."

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* Hobbes' translation, quoted by Sprat. Johnson Poet. vol. 26. p. 234, 235.

† Med. Rep. vol. 1. p. 20. ‡ Lib. 2. c. 51. § Lib. 2. c. 47. ¶ Lib. 2. c. 48.

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* Lib. 2. c. 58. vide ante, 2d. c. 50.

† Lib. 2. cap. 58.

‡ See Med. Rep. vol. 1. p. 19.

As Plutarch seems to be held in disgrace with the Medical Repository, it is perhaps unnecessary to say any thing in his favour, yet he is certainly entitled to all the advantage of a coincidence in opinion with Thucydides, who says, that the plague did not enter into the Peloponnesus in any degree worth relating, but raged principally at Athens, and in other places that were populous.* And the towns of Peloponnesus and Bœotia escaped, " notwithstanding the numerous rencounters between hostile nations."† Here let us pause.

In productions where among many things useful and important, some errors are discovered, it is not displeasing to cut them off and bring that which was good before, a step nearer perfection. In proportion, however, as these errors are numerous, this pleasure diminishes ; and there is a point, at which the mind becomes weary, even of well doing, and sinks beneath the accumulated weight of fatigue and disgust. That point is contained within the essay before us, wherein by a kind of fatality it happens that the pain of exposing error is never relieved by the pleasure of confirming truth. When nations are at war, it usually happens that numerous rencounters do actually take place ; yet at this period of the Peloponnesian war, not one single rencounter, skirmish, or battle was fought at land between the Athenians and their foes. This error is the more astonishing, because the conduct of Pericles in restraining his countrymen from the field, during both the invasions of the Lacedemonians and their allies, forms, not only the most striking feature of his policy, but is particularly discussed and repeatedly mentioned in the history of Thucydides, the principal reliance of Dr. Smith, in what he is pleased to term "a narration of facts."*

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* Lib. 2. c. 51.

† Med. Rep. 1, p. 21.

The 14th convincing circumstance traces a resemblance "between the plague and the scurvy, a disease universally attributed to confinement, bad air, and a want of fresh provisions."

15th. There was always a decline of the plague when the harvest of the preceding year was spared, and the plague returned when the harvest of the preceding year was not spared.

There is nothing in Thucydides concerning these intermissions and returns of the plague, so scrupulously recorded in the Medical Repository, and it is to be regretted that no authority is cited in their support, unless indeed they are to be found in no other history than that which mentions the "numerous rencounters" before alluded to.

16th. The plague did not cease till after the incursions of the Peloponnesians were given over.

These incursions, (if the true historian be worthy of credit) were given over the sooner on account of the plague, reports of which were carried by deserters from Athens to the Peloponnesians. No inference can, however, be drawn from this, for it is more than probable that the fears of the Lacedemonian general, overpowering his reason, he retreated without taking time to consider the subject with philosophical precision.

17th and 18th. Indications of the sentiments of the Athenians; for they accused Pericles of having caused the plague by bringing together so many people; and, after the war, provided for future contingencies by building habitations for the country people.

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* In the 13th, 14th, 15th, 20th, 21st, 23d, and 57th caps. of the second book

After having in another place deliberately rejected the opinion of the Athenians concerning the plague, it was rather unexpected to find them brought forward at this late hour, co-operating without any deduction in the difficult work of entire conviction.

Those who are acquainted with the history of the Athenians, well know the falsehood and the folly of their popular accusations. The banishment of Aristides, and the death of Socrates, might as well be regarded as evidences of their guilt, as this popular commotion an evidence "of the domestic origin of the Athenian plague." Yet let me add that it is not without its use; and if for nothing else, yet ought it to be remembered for this, that it affords an inimitable specimen of the sources of argument, and mode of reasoning upon which this author has in many instances relied, and by which he has fondly expected to produce universal conviction.

The account of this tumult by Thucydides, is simple and affecting. "After this second invasion of the Peloponnesians, the Athenians, when both their country was laid waste, and they themselves overwhelmed by the double horrors of pestilence and war, changed their minds, and held Pericles in displeasure as the advocate of the war, and the author of all their misfortunes; they determined to yield to the Lacedemonians, and sent ambassadors for that purpose; these were rejected; not knowing what to do in this extremity, they turned upon Pericles,"* the first citizen in the republic, alike eminent for wisdom and valour, endowed with irresistible eloquence and unconquerable magnanimity, and whose counsels, if remembered, would have rescued his ungrateful countrymen from a foreign yoke.† The accusation of such a man by such a people, and under such circumstances, is deemed a serious and impressive fact, from which important conclusions may be drawn. The number of those, we trust, is small who can mistake for the voice of reason, the ravings of a frantic populace; sick with hope deferred, confounded by accumulated disasters, and left without comfort or resource. One speech from Pericles, (an attentive perusal of which would have been profitable to the author in the Repository) silenced their false clamour, and, adds the historian, "soon after, as the people are wont to do, they choose him for their general, and committed all things to his care."* Any conclusions, therefore, drawn from their accusation at first, must be completely overthrown by their conviction of its injustice at last. The eighteen circumstances have all been considered; many of them are trifling and inconclusive, but more of them incorrectly stated and unfounded.

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* Lib. 2. c. 59. † Lib. 2. c. 65.

The author of this paper is not a physician; and his principal design was to rescue a favourite author from merciless hands: whatever may be his success in this attempt, he can never regret the occasion, which has thrown in his way an act of retribution so just, as an exposure of the errors in fact, and fallacies in logic, which are conspicuous in the first essay of the Medical Repository.

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* Lib. 2. c. 65.

Art. II. Cases *of* Organic Diseases of the Heart; *with dissections and some remarks intended to point out the distinctive symptoms of these diseases. Read before the Counsellers of the Massachusetts Medical Society. By* John E. Warren, M. D. Boston. T. B. Wait & Co. 8vo. pp. 61. 1809.

We owe an apology to our readers, and particularly to the author of the work now before us, for having so long omitted to notice the present performance. Not that we believe, that any thing we could say would add to the value of his labours, or impress the public with sentiments of higher esteem as to their nature and utility; but as far as it is in our power to make known the results which have attended the investigations of Dr. Warren, so far, we think, an earlier notice of them might have been attended with greater advantages. It is altogether unnecessary for us to enter into a discussion on the importance of morbid anatomy, or to offer any thing in recommendation of it as a branch of medical study. It has long claimed the attention of many of the most distinguished authors; the progress which has been made in it is considerable; and its utility is daily more and more generally acknowledged. Researches too of this nature, when relating to the pathology of the human heart, seem to possess a peculiar interest; for though the structure and functions of this viscus in a sound state have been examined with greater success than perhaps those belonging to any other part of our system, yet it must be admitted that there are no diseases so little understood, and none which in the treatment are more frequently followed by disappointment, than those immediately connected with derangements of this organ.

These considerations of themselves must necessarily induce us not lightly to estimate the labours of those who attempt to dissipate the obscurity in which this subject is enveloped, and particularly the performance of Dr. Warren, which, in every respect, is entitled to the highest praise.

But there are other considerations which cannot but serve to enhance the value of the present essay. In this country a work exclusively on morbid anatomy is indeed a rarity; and if we except the examinations which have been made of individuals who have died of the yellow fever during its prevalence in different years, we scarcely recollect any thing that has been done to aid in the advancement of this branch of the healing art. We feel humbled while we make this declaration, a declaration by no means calculated to flatter our self-love, or to elevate our characters in the estimation of our medical brethren abroad. In justice, however, it must be admitted that popular prejudice in this country is so strong against the examination of bodies after death, as often to defeat the best wishes even of the few of our physicians who are competent to conduct investigations of this nature. This circumstance, though it may lessen the reproach which is bestowed upon us, does not altogether remove it. For had all who have enjoyed opportunities equal to our author embraced them with equal earnestness, and recorded with a like attention their researches, a body of useful information could not fail to have crowned their labours. But we can only wish that this had been the case: to have expected a different result during the low state of medical learning in our country, would have betrayed a credulity that could originate only from the greatest mental weakness. In these incidental reflections on the past, we are naturally induced to make a few remarks on the present and future state of our profession. As observations of this kind, however, would in some degree here be misplaced, we shall enter more at length into an examination of this interesting subject in a subsequent part of the present number.

In the volume of Dr. Warren are detailed the histories of ten cases of diseases of the heart, which occupy about thirty pages; the remaining part of the work, of equal extent, contains a further illustration of these cases, and additional particulars relative to the 9th and 10th, as ascertained by dissection; together with some interesting observations on organic diseases of the heart in general. The first of the ten cases related, is that of Gov. Sullivan, the late chief magistrate of Massachusetts; it is most minutely detailed, and the most interesting. We abstain, however, from making any extracts from the present publication: to present the valuable part would be to transcribe the whole; and we wish not to diminish its circulation by lessening its originality. Every one who feels an interest in the subject on which it treats, will read it with satisfaction, and all who are gratified with the advancement of medical science in our country, will unite with us in our acknowledgments to Dr. Warren for his well directed labours.

ART. III. AMERICAN ORNITHOLOGY; *or the Natural History of the Birds of the United States: illustrated with Plates engraved and coloured from original Drawings taken from Nature. By* ALEXANDER WILSON. Philadelphia. Inskeep and Bradford. Imperial 4to. vol. iii. pp. 120. vol. iv. pp. 100. 1811.

AMONG the numerous attainments which adorn the human mind, the science of natural history has always held an elevated rank. The several departments of knowledge which it embraces, whether estimated according to their intrinsic importance, their influence in relation to the concerns and interests of common life, or the intellectual enjoyment they afford, have been cultivated, though with unequal success, in all ages, and among all nations. A list of the learned and ingenious who have directed their labours towards the elucidation of natural history, would not suffer by comparison with that which might be produced in any other branch of human inquiry. In that particular department which relates to the history of the animal kingdom, the list of great names is indeed splendid, both for numbers and importance. In such a list would appear the names of Aristotle, (himself a host,) Linnæus, Ray, Buffon, Pennant, Edwards, Latham, Bonnet, and Shaw. We make these observations not that we think they present any thing new to the reader, but because they speak a language which cannot be misunderstood in favour of a branch of science in general not duly appreciated. If the profound and comprehensive intellect of Aristotle thought itself worthily employed in composing the History of Animals, and the ardent and vigorous mind of Buffon was satisfied when he offered to the world his 'Histoire Naturelle,' the result of fifty years devotedness to study, what are we to think of the opinions of those who represent researches of this kind as beneath the dignity of science, and fit only to amuse the idle and the vulgar?

With sentiments strongly in favour of inquiries into the several departments of nature, and persuaded that they give peculiar pleasure to those who are thus employed, and add to the amount of rational happiness among mankind, we take up the present volumes. The former parts of the Ornithology, have already engaged our attention; and every lover of natural history will rejoice to hear that those now before us are worthy of occupying the same rank as their predecessors. In manner and in matter we recognize every excellence that gave such a lively interest to those which passed under our first review. [See *Register, vol.* 1. *p.* 96, &c.]

Mr. Wilson was directed to the study of nature by the impulse of native genius; and to gratify his ardent desire for natural knowledge, has zealously devoted the chief part of his life to a most interesting department of animated nature. A residence of nearly twenty years in this country, has afforded him opportunities superior to those ever enjoyed by any who have attempted the same subject. That he has availed himself of these, and to the fullest extent, is evinced in every page of these elegant volumes. If we advert to his descriptive talents as a writer, we find that he minutely and accurately records the haunts of the feathered tribe; their forms and colours, their food, the seasons of their migration, their manners, and every other distinguishing characteristic. That he is equally free from the technical terms of professed systematic writers, and those dry descriptions which have so much retarded the general diffusion of this science; and that while he evinces an ardent mind and brilliant imagination, he communicates all that he wishes to say in a style adapted to the comprehension of every capacity, and in a manner which cannot fail to allure the most inattentive reader. But in thus freely bestowing our decided approbation on the intellectual abilities of our author, as displayed in this masterly performance, let us not omit to notice that moral and religious character, which is every where so manifest in his writings. Accustomed to examine with the contemplative eye of the philosopher, the work of the great creator, he sees wisdom, and order, and benevolence in every part; and whether he directs his attention to the meanest and most humble, or most magnificent and exalted of his creatures, seems to hold 'converse with his providence.' In the exercise of his talents as a painter, he has left us nothing to wish. The drawings are mostly of the natural size, are copied and coloured from nature, and convey at the first glance, accurate and impressive ideas of the subjects they represent.

The following extract is taken from the account of the purple Grakle, the *gracula quiscala* of Linnæus, the crow black bird of Bartram.

"This noted depredator is well known to every careful farmer of the northern and middle states. About the 20th of March, the purple grakles visit Pennsylvania from the south, fly in loose flocks, frequent swamps and meadows, and follow in the furrows after the plough; their food at this season consisting of worms, grubs, and caterpillars, of which they destroy prodigious numbers, as if to recompense the husbandman before hand, for the havock they intend to make among his crops of Indian corn. Towards evening they retire to the nearest cedars and pine trees to roost; making a continual chattering as they fly along. On the tallest of these trees they generally build their nests in company, about the beginning or middle of April; sometimes ten or fifteen nests being on the same tree. One of these nests, taken from a high pine tree, is now before me. It measures full five inches in diameter within, and four in depth; is composed outwardly of mud, mixed with long stalks and roots of a knotty kind of grass, and lined with fine bent and horse hair.

"The eggs are five, of a bluish olive colour, marked with large spots and straggling streaks of black and dark brown, also with others of a fainter tinge. They rarely produce more than one brood in a season.

"The trees where these birds build, are often at no great distance from the farm house, and overlook the plantations. From thence they issue, in all directions, and with as much confidence, to make their daily depredations among the surrounding fields, as if the whole were intended for their use alone. Their chief attention, however, is directed to the Indian corn in all its progressive stages. As soon as the infant blade of this grain begins to make its appearance above ground, the grakles hail the welcome signal with screams of peculiar satisfaction, and without waiting for a formal invitation from the proprietor, descend on the fields and begin to pull up and regale themselves on the seed, scattering the green blades around. While thus eagerly employed, the vengeance of the gun sometimes overtakes them; but these disasters are soon forgotten, and those

> ' ——— who live to get away,
> Return to steal, another day.'

" About the beginning of August, when the young ears are in their milky state, they are attacked with redoubled eagerness by the grakles and red-wings, in formidable and combined bodies. They descend like a blackening, sweeping tempest on the corn, dig off the external covering of twelve or fifteen coats of leaves, as dexterously as if done by the hand of man, and having laid bare the ear, leave little behind to the farmer but the cobs, and shrivelled skins that contained their favourite fare. I have seen fields of corn of many acres, where more than one half was thus ruined. Indeed the farmers in the immediate vicinity of the rivers Delaware and Schuylkill, generally allow one-fourth of this crop to the black birds, among whom our grakle comes in for his full share. During these depredations, the gun is making great havock among their numbers, which has no other effect on the survivors, than to send them to another field, or to another part of the same field. This system of plunder and retaliation continues until November, when towards the middle of that month they begin to sheer off towards the south. The lower parts of Virginia, North and South Carolina, and Georgia, are the winter residences of these flocks. Here numerous bodies, collecting together from all quarters of the interior and northern districts, and darkening the air with their numbers, sometimes form one congregated multitude of many hundred thousands. A few miles from the banks of the Roanoke, on the 20th of January, I met with one of those prodigious armies of grakles. They arose from the surrounding fields with a noise like thunder, and descending on the length of road before me, covered it and the fences completely with black, and when they again rose, and after a few evolutions descended on the skirts of the high timbered woods, at the same time destitute of leaves, they produced a most singular and striking effect; the whole trees for a considerable extent, from the top to the lowest branches, seeming as if hung in mourning; their notes and screaming the meanwhile resembling the distant sound of a great cataract, but in more musical cadence, swelling and dying away on the ear, according to the fluctuation of the breeze. In Kentucky, and all along the Mississippi, from its junction with the Ohio to the Balize, I found a number of these birds, so that the purple grakle may be considered as a very general inhabitant of the territory of the United States.

" Every industrious farmer complains of the mischief committed on his corn by the *crow blackbirds*, as they are usually called; though were the same means used as with pigeons, to take them in clap nets, multitudes of them might thus be destroyed, and the products of them in markets, in some measure, indemnify him for their depredations. But they are most numerous and most destructive at a time when the various harvests of the husbandman demand all his attention, and all his hands to cut, cure, and take in; and so they escape with a few sweeps made among them by some of the younger boys with a gun; and by the gunners from the neighbouring towns and villages; and return from their winter quarters, sometimes early in March, to renew the like scenes over again. As some consolation, however, to the industrious cultivator, I can assure him, that were I placed in his situation, I should hesitate whether to consider these birds most as friends or enemies, as they are particularly destructive to almost all the noxious worms, grubs, and caterpillars that infest his fields, which were they allowed to multiply unmolested, would soon consume nine-tenths of all the productions of his labour, and desolate the country with the miseries of famine! Is not this another striking proof that the Deity has created nothing in vain; and that it is the duty of man, the lord of the creation, to avail himself of their usefulness, and guard against their bad effects as securely as possible, without indulging in the barbarous and even impious wish for their utter extermination?" vol. iii. p. 44—47.

In the following notice of the ivory-billed woodpecker, the *picus principalis* of Linnæus, the reader has a very favourable specimen of Mr. Wilson's abilities as a writer. Like an able biographer, he seizes hold of some striking circumstance or action, and by relating it faithfully, gives a much better idea of his hero, than pages of abstract description.

"This majestic and formidable species in strength and magnitude, stands at the head of the whole class of woodpeckers hitherto discovered. He may be called the king or chief of his tribe; and nature seems to have designed him a distinguished characteristic in the superb carmine crest and bill of polished ivory, with which she has ornamented him. His eye is brilliant and daring; and his whole frame so admirably adapted for his mode of life, and method of procuring subsistence, as to impress on the mind of the examiner the most reverential ideas of the creator. His manners have also a dignity in them superior to the common herd of woodpeckers. Trees, shrubbery, orchards, rails, fence posts, and old prostrate logs, are alike interesting to those, in their humble and indefatigable search for prey; but the royal hunter now before us, scorns the humility of such situations, and seeks the most towering trees of the forest; seeming particularly attached to those prodigious cypress swamps, whose crowded giant sons stretch their bare and blasted or moss-hung arms midway to the skies. In these almost inaccessible recesses, amid ruinous piles of impending timber, his trumpet-like note and loud strokes resound through the solitary savage wilds, of which he seems the sole lord and inhabitant. Wherever he frequents, he leaves numerous monuments of his industry behind him. We there see enormous pine trees with cartloads of bark lying around their roots, and chips of the trunk itself in such quantities as to suggest the idea that half a dozen of axe-men had been at work there for the whole morning. The body of the tree is also disfigured with such numerous and so large excavations, that one can hardly conceive it possible for the whole to be the work of a woodpecker. With such strength, and an apparatus so powerful, what havoc might he not commit, if numerous, on the most useful of our forest trees; and yet with all these appearances, and much of vulgar prejudice against him, it may fairly be questioned whether he is at all injurious; or at least whether his exertions do not contribute most powerfully to the protection of our timber. Examine closely the tree where he has been at work, and you will perceive that it is neither from motives of mischief nor amusement that he slices off the bark, or digs his way into the trunk. For the sound and healthy tree is not the least object of his attention. The diseased, infested with insects, and hastening to putrefaction, are his favourites; there the deadly crawling enemy have formed a lodgement between the bark and tender wood, to drink up the very vital part of the tree. It is the ravages of these vermin which the intelligent proprietor of the forest deplores as the sole perpetrators of the destruction of his timber. Would it be believed that the larvæ of an insect or fly, no larger than a grain of rice, should silently and in one season, destroy some thousand acres of pine trees, many of them from two to three feet diameter, and a hundred and fifty feet high! Yet whoever passes along the high road from Georgetown to Charleston, in South Carolina, about twenty miles from the former place, can have striking and melancholy proofs of this fact. In some places the whole woods, as far as you can see aroundy ou, are dead, stripped of the bark, their wintry-looking arms and bare trunks bleaching in the sun, and tumbling in ruins before every blast, presenting a frightful picture of desolation. And yet ignorance and prejudice stubbornly persist in directing their indignation against the bird now before us, the constant and mortal enemy of these very vermin, as if the hand that probed the wound to extract its cause, should be equally detested with that which inflicted it; or if the thief-catcher should be confounded with the thief. Until some effectual preventive or more complete mode of destruction can be devised against these insects and their larvæ, I would humbly suggest the propriety of protecting and receiving with proper feelings of gratitude, the services of this and the whole tribe of woodpeckers, letting the odium of guilt fall to its proper owners.

"In looking over the accounts given of the ivory-billed woodpecker by the naturalists of Europe, I find it asserted that it inhabits from New Jersey to Mexico. I believe, however, that few of them are ever seen to the north of Virginia, and very few of them even in that state. The first place I observed this bird at, when on my way to the south, was about twelve miles north of Wilmington, in North Carolina. There I found the bird, from which the drawing of the figure in the plate was taken. This bird was only wounded slightly in the wing, and on being caught, uttered a loudly reiterated and most piteous note, exactly resembling the violent crying of a child; which terrified my horse so, as nearly to have cost me my life. It was distressing to hear it. I carried it with me in the chair under cover to Wilmington. In passing through the streets, its affecting cries surprised every one within hearing, particularly the females who hurried to the doors and windows with looks of alarm and anxiety. I drove on, and arriving at the piazza of the hotel where I intended to put up, the landlord came forward, and a number of other persons who happened to be there, all equally alarmed at what they heard; this was greatly increased by my asking whether he could furnish me with accommodations for myself and my baby. The man looked blank and foolish, while the others stared with still greater astonishment. After diverting myself for a minute or two at their expense, I drew my woodpecker from under the cover, and a general laugh took place. I took him up stairs and locked him up in my room, while I went to see my horse taken care of. In less than an hour I returned, and on opening the door he set up the same distressing shout, which now appeared to proceed from grief, that he had been discovered in his attempts at escape. He had mounted along the side of the window nearly as high as the ceiling, a little below which, he had begun to break through. The bird was covered with large pieces of plaster; the lath was exposed at least fifteen inches square, and a hole, large enough to admit the first opening to the weather-boards; so that in less than another hour he would certainly have succeeded in making his way through. I now tied a string round his leg, and fastening it to the table, again left him, I wished to preserve his life, and had gone off in search of suitable food for him. As I reascended the stairs, I heard him again hard at work, and on entering, had the mortification to perceive, that he had almost entirely ruined the mahogany table to which he was fastened, and on which he had wreaked his whole vengeance. While engaged in taking the drawing, he cut me severely in several places, and on the whole, displayed such a noble and unconquerable spirit, that I was frequently tempted to restore him to his native wood. He lived with me nearly three days, but refused all sustenance, and I witnessed his death with regret." vol. iv. p. 20—23.

"The food of this bird consists, I believe, entirely of insects and their larvæ. The pileated woodpecker is suspected of sometimes tasting the Indian corn; the ivory-billed never. His common note repeated every three or four seconds, very much resembles the tone of a trumpet or the high note of a clarionet, and can plainly be distinguished at the distance of more than half a mile; seeming to be immediately at hand, though perhaps more than one hundred yards off. This it utters while mounting along the trunk or digging into it. At these times, it has a stately and novel appearance; and the note instantly attracts the notice of a stranger. Along the borders of the Savannah river, between Savannah and Augusta, I found them very frequently; but my horse no sooner heard their trumpet-like note, than remembering his former alarm, he became almost ungovernable." vol. iv. p. 24—25.

The ensuing extract, copied from the preface to the 4th volume, beautifully portrays the author's mind, and is equally becoming the philosopher and the christian.

"Is it possible for a rational and intelligent being, to contemplate these scenes without interest and without admiration? Innocence has charms that arrest almost every beholder, and can we survey the sportive and endearing manners of these with indifference? Men join with reverence in praises to the great creator, and can they listen with contempt to the melodious strains, the hymns of praise which these joyful little creatures offer up every morning to the fountain of light and life? Who can contemplate, unmoved, the distress of a fond mother for her dying infant? And has that tender mother no claims on our sympathy, who, unprotected herself, prefers death rather than her young should suffer? Is tenderness of heart, fidelity, and parental affection, only lovely when they exist among men? Oh no! it is impossible!—those virtues that are esteemed the highest ornaments of our nature seem to be emanations from the Divinity himself; and may be traced in many of the humble and least regarded of his creatures." p. x.

But to conclude: the *Ornithology of the United States,* in which Mr. Wilson is engaged, exhibited in the manner of these volumes, is a magnificent undertaking, and calculated for the exercise of the greatest abilities. Fortunately for our country, it has fallen into the hands of one eminently qualified to execute it.

ART. IV. A COMPENDIUM *of the theory and practice of* MIDWIFERY: *containing practical instructions for the management of women during pregnancy, in labour, and in childbed: calculated to correct the errors and improve the practice of midwives; as well as to serve as an introduction to this art, for students and young practitioners. Second edition, enlarged. By* SAMUEL BARD, M. D. *President of the College of Physicians and Surgeons of the University of New-York, &c.* New-York. Collins & Co. 12mo. pp. 255. 1811.

THE first edition of the present Compendium made its appearance previously to the commencement of our labours: we have, therefore, little more to do than to announce that this second edition has been carefully corrected and revised throughout, and that the venerable author has considerably enhanced its value by several important additions. The rapid sale with which the work has already been favoured, affords abundant evidence of the public estimation in which it is held, and renders any commendation of ours the less necessary. We cannot, however, but remark, that few if any have ever enjoyed a longer and greater share of practice in that branch of the profession to which the present volume relates, than Dr. Bard. Possessing in a high degree the talent to observe, and the ability to record in a style remarkable for its unaffected perspicuity, the results of his long experience, he has completed a work, which, though designed chiefly for the use of female practitioners in the country, who, it must be confessed, are in general remarkably ignorant and incompetent, is also richly deserving the attention of the medical student and the practitioner. A very important lesson inculcated in this little performance, relates to the use of instruments; the frequent employment of them, as formerly recommended by Smellie, and recently by Baudelocque, is very justly censured, and the resources of nature proved to be sufficient in nearly ninety-nine cases out of an hundred. Our author's account of the ample resources of nature, and his description of natural labour, and its several stages, are superior to any other that we have seen; and when we say this, we have in recollection the truly valuable volumes of Dr. Denman on the same subject.

DOMESTIC INTELLIGENCE.

Present State of Medical Science.

We have on several occasions adverted to the state of Medical Science in this country, and have repeatedly inserted such facts and documents in the Register, as were calculated to gratify the wishes of those who feel an interest in the subject. In a former part of the present number, some few incidental remarks on the same topic were thrown out, and an intimation therein given that we should consider it more at length in another place. This we propose to do at this time; and, while we offer our opinions on a subject, the importance of which is universally acknowledged, we shall accompany them with such official reports, or articles of intelligence, as may be relied upon as authentic, and which will serve to elucidate what we may wish to make known. Every thing connected with the advancement of medical knowledge cannot fail to meet with a welcome reception, and the documents which we propose to insert from time to time, while they are perused by the general reader, will likewise serve as an aid to him who may wish to become acquainted with the *medical history of the United States.* In expressing our thoughts on this important subject, we shall always speak candidly and decidedly, and, we trust, we shall never be guided by any other motive than such as ought to influence every one who feels solicitous for the respectability and usefulness of a profession most intimately connected with the well being of society.

The great disparity in the merits of those who belong to the medical profession, is a topic of daily converse and public notoriety. As the high opinion which, in all ages, has been entertained of the professors of the healing art, must have been founded, not upon any adventitious circumstances, but upon the very nature of the profession itself, and the abilities and acquirements of those who undertook to discharge its important duties, one seems naturally led to examine the merits and conduct of those who lay claim to a like consideration in the community, and to ascertain upon what grounds they assume a rank and importance among mankind, the reward only of commanding talents, severe application, and moral excellence.

That almost every district of our country abounds with individuals who set up to exercise the duties of practitioners of medicine, need scarcely be stated; how great is the number of them, who from the want of proper education, and from habits of indolence, are totally ignorant of the first principles of their profession, and who degrade the noblest of studies into the meanest of arts, cannot have escaped the attention of any who at all regard the interests of society. That characters of this description do abound, not in this or that particular city or district, but are to be met with in almost every part of the country, is a fact which no one, we presume, will have the hardihood to deny. Though they differ from beasts of prey, inasmuch as these are most generally found in the uninhabited wilds of the country, while those are most abundantly congregated in our largest and most populous cities; yet they wage war with equal success as it regards the destruction of their objects. So frequently, indeed, do they present themselves to our view, as almost to have become domesticated and familiar with us, and to have lost that novelty which monsters in general possess. The inroads and depredations which they commit, bid defiance to all calculation; whether they come in the natural shape of nostrum mongers and venders of infallible cures, or whether they assume a peculiar grimace and affected sapience, their touch is equally pestilential. The popular, but erroneous opinion, that there is no certainty in the science of medicine, and that it chiefly depends upon conjecture, emboldens their advances and facilitates their sordid and mercenary views. True it is that this lamentable state of things has not been the product of a day. As quackery is always found to prevail wherever there are knaves and fools to dupe and to be duped, we had early evidence of this species of dishonourable livelihood. As far back as the year 1753, the late historian of this state, speaking of the inhabitants of the city of New-York, observes: "Quacks abound like locusts in Egypt, and too many have recommended themselves to a full practice and profitable subsistence. This is the less to be wondered at, as the profession is under no kind of regulation. Loud as the call is, to our shame be it remembered, we have no law to protect the lives of the king's subjects from the mal-practices of pretenders. Any man at his pleasure sets up for physician, apothecary, and chirurgeon."*

Notwithstanding the strong and forcible manner in which the historian expresses himself, his relation of what he saw in his own times, is no less true of what we ourselves daily witness. But since the period in which he wrote, the evil has rapidly increased, and has at length arrived at an alarming magnitude, and loudly demands the speedy application of some vigorous remedy. We trust our remarks convey no unjust imputations; our attachment and esteem for the profession, induce us to speak with earnestness. The necessity of something like medical reform is obvious, and the learned and the liberal in every quarter are called upon in behalf of so beneficial an undertaking. The degraded state of medical science renders necessary the united exertions of all, if we wish to restore the healing art to its wonted dignity. It were no less absurd to expect light to spring out of darkness, or the salutary influence of the christian revelation to flow from the system of the Brahmins, than to expect that a science in itself liberal and dignified as that of medicine, should receive any support from the ignoble and the vulgar; that the complicated structure of the human frame and the pathology of disease, should be understood by men, who, from education, knowledge, and intellect, are fit only to discharge the duties of some menial office; that a profession, in the attainment of which, an expenditure of some wealth, and a long and severe application is required, should be comprehended by the indolent, and those whose attention is directed solely to the acquisition of money, and whose minds are as gross and heavy as the metal for which they toil. By a steady and fearless perseverance, we are persuaded that in no great length of time, the character of our profession will be rescued from the disgraceful condition to which it has been reduced. The means of producing these salutary changes, are within our reach, and let us strenuously employ them: let all who duly estimate the profession, co-operate in discountenancing impostors in every shape, and let them hold no communion with them; they are a class of beings who, of themselves, like mules and other hybrids, are providentially unable to improve their species. Let not the mere compounder of drugs, whose acquirements enable him to do little more than to distinguish rhubarb from bark, enjoy all the rights and immunities of regular college graduates; and as we deem it necessary that a series of years should be spent in order to handle the last and the awl, let us require, at least, an equal portion of time to be devoted to study, to qualify an individual for the exercise of those duties, upon a proper performance of which, the lives and happiness of his fellow creatures depend.

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* History of the province of New-York. 4to. p. 212.

How, it may be asked, are these important objects to be attained? Nothing will so soon and so effectually accomplish them, as a proper system of medical education rigidly enforced. Every youth, previous to his having engaged in a course of medical studies, should be properly qualified by a suitable preliminary education in classical and mathematical learning, and after having passed through a prescribed course of study in the several departments of medicine, he should be examined by competent characters in all the essential parts of the profession, and if found qualified, be allowed to matriculate as a practitioner. We say the essential parts of his profession, because we think it an error frequently committed in the examination of candidates for this honour, even in our regular medical establishments, that speculative and theoretical opinions are often too highly valued, and that practical knowledge is defrauded of its proper estimation. The only effectual way of affording our youth this kind of knowledge, which is the ultimate object of all their labours, is to impose upon them a proper attendance on the lectures of public teachers, on the clinical practice of our hospitals and other public charities; establishments, indispensable to our medical schools, and without which all efforts to instruct must prove abortive.

Another very important but too much neglected part of instruction, which should be embraced in a plan of medical education, relates to the conduct which ought to be pursued by medical men in their intercourse with each other, and with society at large.

A system of medical ethics must be taught and enforced, otherwise there is no security against those mean artifices to which some men resort to obtain professional business; for it is a lamentable truth, and we state it with reluctance, that individuals are occasionally to be found, who, though they be competent as practitioners, are remarkably wanting in all the essentials which constitute the gentleman. The profession is a liberal one; a liberal conduct ought to be pursued among its members; and those who exercise its duties deserve to be supported. But we will not enlarge on this point, after the able manner in which the subject has been considered by the late Dr. Peter Middleton of this city. The following extract is taken from his *Medical Discourse*, and on the perusal of it, the reader will learn the opinions of a man learned and liberal in his profession, and whose life was a practical illustration of his doctrines. Perhaps he will also perceive, that Dr. Middleton speaks with feelings, the result of something more than observation:

"All the qualifications," says Dr. M. speaking of the character of the physician, "of the head and heart, becoming the character of a gentleman, are indispensably required to constitute the physician of merit, who would secure the esteem of his patients, do honour to himself, or support the dignity of his profession. If it is commendable in him to collect information from every one; he cannot surely, when consistent with the duty he owes himself, refuse to consult with other respectable practitioners, in every case of sickness, upon what can be done for the benefit of the patient. As the humane physician prefers the welfare of his patient, and his own success in practice, to every consideration which pride or avarice can suggest; he will not only with alacrity join in such consultations, when requested to it, but solicit them occasionally, as an indulgence and relief to himself: whereas a contrary conduct can only proceed from sordid motives, or the dread of having his ignorance or mal-practice exposed, to those who only can judge of them. He ought to be extremely cautious of decrying the advice or opinions of others, either by open censure, or *private innuendos:* the former too often proceeds from rusticity of manners; the latter always from *interested views*, or a *dishonest heart.* But the *significant shrug*, the *solemn shake* of the head, the *affected stare of surprise*, the *studied silence of ill dissembled* *doubts*; in short, the *insidious show of good nature,* the subtle and designing *delicacy* of those, who,

> *Willing* to wound, but yet *afraid* to strike,
> Just *hint* a fault, and *hesitate* dislike; Pope.

are the mean arts of needy pilferers of fame, and of spirits poor indeed. To vaunt of extraordinary cures, before such as are not competent judges, or incapable of inquiring into the circumstances of them, may justly render the belief of them at least doubtful. An ostentation of learning in common discourse, even when his profession is the subject, is not always a proof of it; on the contrary, to be unable to convey his sentiments, without having recourse to numerous terms of art, is generally a proof of contracted ideas, and a narrow understanding. The man of real knowledge is generally modest, often diffident, always easy and happy in his choice of words, and never loquacious: while the self-sufficient pretender, like the babbling shallow stream, is ever noisy, froward, and petulant." p. 67.

But in these remarks on the low and degraded state of the medical profession, and on the manner in which we think the evil might be remedied, we happily have, in some degree, been anticipated by the measures which have recently been adopted by our legislature, aided by the liberal and enlightened policy of those who preside over the interests of learning in this state. In April, 1806, an act was passed by the legislature of New-York, for the incorporation of medical societies in the different counties of the state, for the purpose of regulating the practice of physic and surgery. This act may be considered as among the most important that has been made for the regulation of medical science. Institutions of this kind have accordingly been formed in a majority of the counties, and their beneficial effects have, in no few instances, already been experienced. In their organization however, evils of a very serious nature have been allowed to creep in; arising, as it appears to us, from defects in the act of their incorporation. The relative merits of candidates for admission to a seat in these societies were disregarded, and the hand of fellowship allowed to the illiterate and the vulgar, when it ought to have been reserved for the educated and the virtuous. We mean nothing personal in these remarks, and we hope it will not be considered, that we wish to do injustice to the members who compose these associations. Many of them, we know, are gentlemen of great moral worth and eminently skilled in their profession. But that these errors in the first formation of these associations, have materially affected their respectability and limited their usefulness, needs no microscopic observation to discover.

Another circumstance, the existence of which will scarcely be credited by those not connected with the medical profession, is, that the system of examination in these societies, however lax or severe it may be, is put in force only against those youth who receive their education among us. From them alone do we make any exactions. Every one who has at any time assumed the character of physician elsewhere than in our own state, is allowed the full enjoyment of all the privileges which belong to the profession. The door is open to all who feel disposed to enter, and no test of ability is required of them. It would seem that Dr. Middleton had written prophetically when he penned the following paragraph.

"Such being the state of physic here, what wonder is it that this city should be pestered in so remarkable a manner, with the needy outcasts of other places, in the character of doctors; or that this profession, of all others, should be the receptacle and common resource for the refuse of every other trade and employment? The wonder indeed is, that we should be such dupes to their effrontery, as to employ them, or buy their pernicious compositions; not that they should frequent so beneficial a market. So amazingly easy of belief are some people in these miracle-mongers, that, as if there was something creative in the name of Doctor, seldom any other test of their skill is required, than their assuming that title: so that this appellation, with a competent presence of mind, and a string of ready coined cures, carefully propagated by such as find their account in carrying on the cheat, have seldom failed of procuring traffic in New-York. We are told that the university of Turin forbids itinerant doctors, to vend medicines, without a license from the professors of physic, under pain of death." p. 64.

We will not insult the understanding of the reader, by telling him that in this description, the necessity of reform is strongly indicated.

Fortunately the solicitude of the legislature was not manifested merely in granting power to each county of the state for the organization of a medical society. Convinced that something still more effectual was required, in order to lessen the numerous abuses existing in medicine, the regents of the university deemed it expedient in the following year, 1807, to establish a College of Physicians and Surgeons, in this city, and the legislature, sensible of the benefits resulting to the community from such an establishment, sanctioned their enlarged views, by a liberal appropriation for its support. It may here be remarked, that full authority had been vested in the regents to organize a college to be exclusively devoted to the cultivation of medical science as early as 1791. That so many years elapsed before that learned body thought fit to exercise that power, appears to have been on account of the existence of the medical school attached to Columbia College; which it was hoped would in time supersede the necessity of another medical institution. How far the medical school of Columbia

College has been successful, or to what causes its failure is to be ascribed, are questions somewhat irrelevant to our present subject, and which we shall not now consider. Those who are desirous of further information, are referred to a late pamphlet on this subject.*

The organization of the College of Physicians and Surgeons of this city, by the regents of the university, and its immediate sanction by an enlightened legislature, was a circumstance viewed with the greatest satisfaction, and afforded just cause of congratulation to the friends of science throughout the state. That the high expectations which were entertained of the benefits that would flow to the community from its establishment, are proved to have been well founded; the history of the college, during the few years it has been in operation, presents the most conclusive evidence.

It is upon institutions of this nature, upon well organized and liberally endowed colleges, devoted solely to the cultivation of the several branches of medical science, that reliance is to be placed. It is to these we are to look if ever we wish to rid society of those base and daring men, who appropriate to themselves the rewards due to the ingenuous, the unassuming, and the learned; and the enlightened policy of our rulers, as far as it has been directed to these institutions, cannot be too highly commended. But the salutary work is yet in its infancy. Our colleges must be invigorated by legislative munificence, as the only effectual means of rendering education cheap and accessible, and of furnishing a sufficient number of well educated practitioners for our country, our army, and our navy.

But not to enlarge upon a subject which seems to be duly appreciated by those best qualified to judge of its real importance. In a late report to the legislature of this state, the Hon. the Regents of the University have manifested their solicitude in behalf of an improved system of instruction, and a more extensive diffusion of medical knowledge; and it is highly satisfactory to observe the language they employ, when speaking of the Medical establishment under their own immediate care and protection, the College of Physicians and Surgeons of this city. The experience of all has universally proved that in a *large and populous city* only can an institution devoted to the purposes of medical instruction flourish; and, from the many and great advantages which the city of New-York affords, a place better calculated for the establishment and support of a great medical school is not to be found in the western hemisphere. May this institution, under the guidance of its venerable president, aided by the learning, abilities, and unwearied exertions of its professors, give fresh vigour to the drooping state of medical science, and spread its sanative influence through a diseased land; and may the wisdom which gave it being, long live to cherish and protect it.

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* Observations on the establishment of the College of Physicians and Surgeons, in the city of New-York. By *David Hosack*, M. D. *New-York*, 1811. See also Dr. *Hosack's* Introductory Discourse. *Register*, vol. 2. p. 225.

Legislature of the State of New-York.

In Assembly, May 23, 1812.

To the Honourable the Legislature: The Regents of the University respectfully report:

That the colleges and academies of the state continue to furnish favourable evidences of the increase of literature, and the beneficial effects of the patronage and fostering care of government.

Columbia College already experiences the advantages of the improved system* recently digested and adopted by the trustees, and they entertain the most flattering anticipations of its effects.

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* Referring to the late improvements made in the *Classical* department of this institution. Ed.

The prosperous state of Union College, proves that its liberal endowments have been properly bestowed.

The vast and rapidly increasing population of the western parts of the state, have induced the regents, on an application from a number of respectable citizens of the western district, and other sections of the state, together with the trustees of Hamilton Oneida Academy, to concede the incorporation of a college to that institution, on the condition that its funds be augmented to the amount of fifty thousand dollars; by which means it is believed that the benefits of a liberal education will be brought within the reach of numbers, who would otherwise, from necessity, remain destitute of it.

The organization of the College of Physicians and Surgeons has been improved, and it now presents a fair prospect of speedily rising to a state of usefulness and celebrity, such as may be justly expected from the importance of the community in which it is situated, and the government under whose auspices it has been erected.

A gentleman universally acknowledged among the first in the medical profession in America, has consented to be placed at the head of it, and professors of the best talents have been procured to deliver instruction in it.

As a means of rendering the usefulness of this establishment more extensive, especially among the citizens of the state, the trustees have suggested the measure of providing by law for the gratuitous instruction of a student from each county.

This measure is also recommended, and advocated with reasons that cannot fail to produce a conviction of its propriety, in an appendix to a discourse delivered at the opening of the last session of the Medical School, by the president, whose judgment on the subject is entitled to the highest confidence: the regents, therefore, cordially recommend it to the attention of the legislature. All which is respectfully submitted. *By order of the Board,*

DANIEL D. TOMPKINS,

Chancellor of the University.

Albany, May 27, 1812.

SATURDAY, May 30, 1812.

Mr. Clark, from the joint committee of the senate and assembly, appointed to take into consideration the report of the regents of the university, reported as follows:

That the committee have taken into mature consideration the subjects contained in the said report of the regents, especially that part which relates to the gratuitous instruction of a student of medicine from each county of this state. The committee, on this subject, have been assisted by the judicious remarks of the enlightened and able gentleman who presides over the College of Physicians and Surgeons. The committee are unanimously of opinion, that such a diffusion of medical knowledge, as is proposed by the honourable regents, is of great public importance, and highly deserving of the patronage of an enlightened legislature. The committee have prepared a clause for that purpose, and directed their chairman to ask for leave to present the same, to be added to some proper bill.

Leave was given accordingly.

Medical Commencement in the University of New-York.

The annual Medical Commencement for the purpose of conferring the degree of Doctor in Medicine in the College of Physicians and Surgeons of this city, was held on Tuesday, the 5th of May, 1812. The honours of the College were publicly conferred by the venerable and learned president, Dr. SAMUEL BARD, in the presence of the Hon. the

Regents of the University, the Trustees, and other officers of that institution, &c. &c. The degree of Doctor in Medicine was granted to the following twenty gentlemen, eleven of whom were regular students of the College, had undergone the requisite examinations prescribed by its laws, and defended the respective inaugural dissertations annexed to their names.

Robert M. Barclay, A. B. of Orange county, N. Y.—" *On Marsh Miasmata.*"

Charles Drake, of the city of New-York—" *On the Proximate Cause of Inflammation.*"

Gideon C. Forsyth, of the city of New-York—" *On the Blood.*"

James Fountain, of Westchester county, N. Y.—" *On Typhus Fever.*"

Jabez W. Husted, of Westchester county, N. Y.—" *On Tetanus.*"

Frederick J. Hill, of North-Carolina—" *On Gout.*"

Richard I. Ludlow, of New-Jersey—" *On Respiration.*"

Samuel Maxwell, of Montgomery county, N. Y.—" *On the Transfusion of Blood.*"

Isaac Roosevelt, A. B. of the city of New-York—" *On Angina Pectoris.*"

Dirk G. Salomons, of St. Eustatia, W. I.—" *On Human Intestinal Worms.*"

Delos White, A. B. of Otsego county, N. Y.—" *On Ulcers.*"

The honorary degree of Doctor in Medicine was conferred on the following gentlemen:

Alexander Shelden, of the county of Montgomery.
John Stearns, of the city of Albany.
Westel Willoughby, Jun. of Herkimer county.
Oliver C. Comstock, of Schenectady county.
William Kirkpatrick, of Onondaga county.
Joseph White, of Cherry Valley, Otsego county.

DAVID BAILLIE WARDEN, American Consul at Paris.

ANDREW MORTON, of the city of New-York.

JOHN AUGUSTINE SMITH, Professor of Anatomy and Surgery in the College of Physicians and Surgeons.

History of the YELLOW FEVER, *which prevailed at* PERTH AMBOY, *(N. J.) in the summer of* 1811, *and of the evidences of its importation into that place.*

WE at length give place to the following report on the yellow fever, and the official proceedings of the Board of Health relative to the same. Our only apology for having so long delayed the publication of these interesting papers, is, that we have not had room for them before, the pages of the Register having been occupied with the favours of our numerous and highly respectable correspondents. In the publication of this statement, we shall only remark, that if the facts now given relative to the introduction of the yellow fever into the city of Amboy, do not carry conviction to the minds of all who peruse it, we may truly say, *neither will they be persuaded, though one rose from the dead.* ED.

Board of Health of New-York, September 16, 1811.

The Honourable DE WITT CLINTON, *President.*

Information having been given to the board that a dangerous, malignant, and infectious fever now prevails at the city of Amboy, in New-Jersey; it was resolved, that it be recommended to his honour the Mayor to issue his proclamation interdicting all communication between the said city of Amboy and this city.

Resolved also, that a committee be appointed to confer with the health officer at the quarantine ground, and obtain from him, and from such other sources as they shall judge advisable, information of the existence of the said disease, and other facts deemed necessary by them, and report with all convenient speed to this board.

Resolved, that the committee appointed, be Dr. Joseph Bayley, Dr. John H. Douglass, of this board, and Dr. David Hosack, of this city, and that the health officer, Dr. Rodgers, be associated with them.

September 19, 1811.

The committee appointed to confer with the health officer, and to ascertain the facts respecting the disease prevailing at Amboy, presented the following report, which was approved, and ordered to be entered on the minutes.

Report of the Committee appointed by the Board of Health to investigate the nature and origin of the disease now prevailing at Perth-Amboy, New-Jersey; addressed to the President and Members of the Board:—

Gentlemen,

Agreeably to the instructions conveyed by the resolution of the Board of Health, we yesterday proceeded to Perth-Amboy, for the purpose of obtaining information relative to the nature and origin of the disease, at present prevailing in that city. The health officer, Dr. Rodgers, having been appointed, with us, a member of the committee, we waited on him, at Staten-Island, with the hope that as he had been at Amboy, and had seen some of those persons who had died of the disease, he would have had it in his power to furnish the information required, and perhaps rendered our visit at Amboy unnecessary; and in case he should not be in possession of the facts which would be expected by the Board of Health, to request him, as a member of the committee, to accompany us, for the purpose of making the necessary inquiries. Upon our arrival at the quarantine ground, we accordingly stated to the health officer, that information had been received by the Board of Health of the prevalence of an infectious disease at

Perth-Amboy, which had excited considerable alarm among the citizens of New-York. That in consequence of this information, the mayor had thought it necessary to issue his proclamation, interdicting the communication between the two places; and that the Board of Health had appointed a committee, for the purpose of inquiring into the facts upon this subject: that Dr. Miller, the resident physician, had been requested by the board to be a member of the committee, but owing to unavoidable engagements, he had declined the appointment: that thereupon they considered it expedient to request the health officer to perform that duty, and understanding that he had already been at Amboy, and had expressed an opinion of the nature of the disease, they had been in expectation of receiving from him an official statement of the facts that were now sought for. Dr. Rodgers replied, "that he did not consider the Board as having any right to expect a communication from him relative to a fever at *Amboy*." We then observed, that as a constant communication existed between Amboy and New-York, and that as the disease might be conveyed to the latter city, they expected from him, as the sentinel at the out-post, every information in his power to communicate; and that by a resolution of the Board, they certainly did expect that he would also communicate to us the facts that had come to his knowledge. Dr. Rodgers then stated, "that when this disease might come under his purview at the quarantine ground, he should consider it his duty to make such communication, but not till then;" and added, "You had better, gentlemen, proceed to Amboy to seek information for yourselves;" that his duties did not permit him to accompany us; that he should probably go again to Amboy to-morrow, and pay a visit of friendship, as his two former visits had been, but should not go in an official capacity. We then expressed the hope, that if he did not think it proper to accompany us, that he would favour us with his opinion of the nature of the disease, and the facts relative to its origin. This also he declined, observing, "that he was delicately situated, and did not wish to express to us an opinion on this subject." We then asked him if he had any objection to give us a statement in writing for the information of the board, and that we would call for it on our return from Amboy. This he also begged leave to decline, adding, however, that if the Board of Health would do him the honour to address him a letter, stating the points on which they wished information, he would answer their questions. We then read to him the resolution of the Board, requesting us to obtain from the health officer such information as he possessed on this subject, and added, that we considered the application conveyed by the present resolution as sufficiently respectful, and expressive of the wishes of the Board for him to communicate the information requested: he however persisted in declining to express to us, as a committee from the Board, either verbally or in writing, any opinion on this subject; repeating, "that his situation was a very delicate one." We then observed, that we had understood he had publicly expressed his opinion, at Amboy, of the nature of the fever prevailing there; he acknowledged he had visited Mr. Kearney at Amboy; that he had also seen Mr. Compton, and that he did express to the two physicians of that place, and in presence of a third person, that Mr. Kearney's case was that of malignant fever of the highest grade. As the term malignant fever appeared to us of ambiguous import, we next inquired if he considered the fever referred to as the *yellow fever:* to this question he answered, he disliked the term *yellow fever*, considering it an improper one, but admitted that the disease was such as would by many persons be denominated yellow fever, and particularly mentioned, that the patient had the *glassy eye* and *yellow skin*. We next asked him, if Mr. Kearney had had the *black vomit;* to this he replied in the affirmative, but that in the other case the stomach was not so much affected; he also stated that Mr. Kearney had been subject to attacks of *bilious fever*, and that upon this late occasion, had been very much fatigued, and prior to his attack had been exposed to the sun without an umbrella. We repeated our request, that he would accompany us on our visit, but he again declining to comply with our wishes, we considered our conference at an end. We immediately proceeded to Amboy, and called upon Mr. Daniel Perrein, the collector of the port, and Dr. Nathaniel Manning, the physician who had attended on all those who had been attacked with the disease. The other physician being out of town, we had no opportunity of conversing with him. Dr. Manning informed us, that he had lost four patients with a fever, which, from its peculiar symptoms, and great mortality, he considered to be the yellow fever; that although he had been two years and a half a practitioner in Perth Amboy, and his partner, Dr. Freeman, had practised medicine in the same place many years before him, and both had been familiarly conversant with the fevers which ordinarily prevail in that city and its vicinity, particularly the bilious remittent, yet that they had never, before the present season, met with any fever attended with the symptoms of that of which their late patients had died, and with which others at that time were affected; and as further evidence, Dr. Manning remarked, that at that very time he had patients ill of both diseases, each exhibiting its characteristic symptoms, and invited us to see them. He also stated, that our health officer, Dr. Rodgers, had visited, with him, two of the first cases, and had pronounced them as decided cases of the yellow fever as he had ever seen.

Dr. Manning then gave us an account of those persons who, in his opinion, had died of the yellow fever, namely, James Compton, who was attacked on the 7th, and died on the 10th instant; James Kearney, attacked on the 9th, and died on the

14th; Joseph Compton, attacked on the 11th, and died on the 15th; and Mrs. Crowell, also attacked on the 11th and died on the 15th. He observed, that a Mrs. Marsh, an elderly lady, died yesterday morning, the 17th, after a week's illness; but her disease did not appear to be characterized by the same symptoms that had distinguished the cases of the first persons that have been mentioned. The first four, he remarked, were all seized with severe pain in the head, back, and limbs, attended with a highly inflamed state of the eyes. On the second or third day, the skin, especially about the neck and breast, became yellow, which colour gradually extended over the greater part of their bodies; and in all, the stomach was very much affected with a sense of heat or burning, and rejected almost every thing received into it; which symptoms he had never found associated in the ordinary autumnal, or any other fevers in that place or neighbourhood. We asked him particularly if he had seen Mr. Kearney in any of his former attacks of fever, to which he had been subject in the autumn, as before related to us by Dr. Rodgers. He replied, he had been his physician in two such attacks, and that his disease exhibited the ordinary characters of our common autumnal remittent fever, and was totally different from the inflammatory symptoms with which he was attacked in his last illness. He particularly remarked, that Mr. Kearney threw off a great quantity of black matter, resembling coffee with the grounds, and mixed with other portions in the form of flakes. We next asked Dr. Manning for his opinion relative to the origin of this extraordinary disease. He replied, that there was but one opinion, either with the inhabitants or physicians, namely, that it was derived from some of the West India vessels, which had been lying at the wharves; observing, however, that the brig Ocean, from St. Bartholomews, was the vessel which the inhabitants in general supposed to have introduced it. The town we observed to be remarkably elevated; the soil chiefly composed of sand; free from all lodgements of water; the streets wide, and the houses for the most part spacious, and at a considerable distance from each other; and the whole town exhibiting an uncommon degree of cleanliness. Dr. Manning also informed us, that there were no local causes to which this calamity could possibly be referred, and that it could only be accounted for as arising from intercourse with the vessels at the wharves; and that the citizens were so perfectly convinced of this fact, that they had ordered them to be removed to the stream. He further stated, that Mr. Kearney and the two Mr. Comptons had all been frequently on board the *brig Ocean*, and another vessel lying along side of her, the *ship Favourite* from the Havanna, both of which vessels had come consigned to Mr. Kearney. He also observed, that Mr. Joseph Compton had not only been on board of the vessels at the wharves, but that he had set up with his brother James during his illness. Mrs. Crowell, the fourth person mentioned, was the wife of a ship carpenter, who resides at the head of the wharf, within fifty yards of the said vessels. Dr. Manning also stated, that Mrs. Crowell was so near to the vessels, that upon one of them (the Ocean) having her bilge water pumped out, she was made very sick by the smell of it, the wind blowing directly towards the house, and into her apartments, and that she herself, during her illness frequently declared to her physician and friends, that in her opinion she had thus taken the disease. It will be readily observed, that the same wind which blew the effluvia of the bilge water, would also convey the poisonous vapour from the adjoining vessel. Having received this information from Dr. Manning, we accompanied him in his visit to five of his patients whom he considered to be the most dangerously ill. We united with him in opinion, in pronouncing three of those, viz. Miss Ann Taylor, Captain James Baynon, and Mr. Voorhees, to be *decided cases of yellow fever.*

The diseases of the two others, Mr. Semple and Mr. Kane, were readily distinguished as the *common bilious remittent of autumn.* The alarming situation of Miss Taylor particularly arrested our attention, although this was the second day of her illness; her symptoms (so peculiar are the features of this disease) were of a character, that declared her to be in the most imminent danger, and with all the kind assistance she receives from her amiable sisters, and the skill of an attentive physician, we have too much reason to fear that she must soon be numbered among the victims of this deadly disease. Miss Taylor resides some distance from the source of infection, but on inquiry, we found she had been unfortunately in the neighbourhood of the vessels, by frequently visiting a friend in the house adjoining to that in which Mrs. Crowell lay ill and died, and that too, at the very time of Mrs. Crowell's illness. We learned also, that the other persons taken ill, had been exposed either directly by being on board the vessels, or by visiting those who were ill of the disease. Many other persons, Dr. Manning informed us, had been just seized with fever, but so recently, that he would not yet undertake to pronounce on the character of the disease. Our attention was also directed to the vessels supposed to have introduced the fever. For this purpose, we applied to the collector of the port, who furnished us with the following facts. That twelve vessels had arrived at that port from the West-Indies, since the first day of June. That many others had arrived from Ireland, full of passengers, in a most filthy condition, but remarkable healthy. He then informed us, that the brig *Ocean*, the vessel at first suspected, arrived at the wharf on the 4th September, from Bartholomews, that she was laden with rum, sugar, molasses, and coffee, that four or five days after her arrival, she began to discharge her cargo. The master, Captain Sutton, being in New-York, we had no opportunity of obtaining any information from him. The collector stated, that Mr. Kearney, as the consignee, was frequently in the hold of the vessel. Captain Little, a passenger in the Ocean, informed us, that her crew had been healthy, but admitted that her bilge water was in a very offensive state, and that in this respect, she was a filthy vessel, but not more so than West-India traders in general. Mr. Perrein next stated, that the ship *Favourite*, James Stuart, master, the other suspected vessel, arrived from the Havanna, and came to the dock on the 30th August, and was also consigned to the late Mr. Kearney, and that she, with the other vessels, was removed to the stream on Sunday last; he added, that Mr. Kearney, the consignee, and the two Mr. Comptons, had been also frequently on board of this vessel. Captain Stuart being in Amboy, we availed ourselves of the opportunity of conversing with him, relative to the state of his vessel. He, with great frankness, gave us every information we requested; he stated, that he first went to North Carolina from Perth Amboy, that he next proceeded to Falmouth, (Jamaica,) and from thence to the Havanna, and that he had brought the crew all back with him in a state of health; that they had all been several voyages to the Havanna, some three, four, and five voyages, and were all well seasoned to the West India climate: he also acknowledged *that it was very sickly at the Havanna when he was there.* Upon questioning him relative to his vessel, he also very candidly stated, that his ballast had not been shifted from the time he left Amboy to this day. Such are the facts we have been enabled to obtain on this subject, and which we beg leave to present to the board without delay. As it has been made our duty to express an opinion of the nature and origin of the disease in question, we feel no hesitation in saying, first, that the disease, in our opinion, is that commonly known and described as the *yellow fever;* and secondly, that it has been satisfactorily traced to one of the two last mentioned vessels, arriving from the West Indies, and that it has most probably been derived from the *ship Favourite, from the Havanna*, which is by all acknowledged to have been a sickly port at the time of her sailing. Nor do we conceive it to be an objection to the correctness of this opinion, that the crew remained healthy throughout the voyage, as it is also stated, that by the several voyages they had made to the Havanna, they had become seasoned to that climate. It will be readily recollected by the board, that a similar instance occurred in July, 1809, at which time two persons from this city worked on board the brig Mary, a vessel from the Havanna, then detained at the quarantine ground, and were seized with the yellow fever, of which they died in this city, although the crew of the same vessel had been in perfect health during the whole of her voyage.

We cannot conclude this communication without remarking, that Mr. Perrein, the collector at Amboy, and Dr. Manning, a physician of the same city, are entitled to our acknowledgments, for the very unreserved and candid manner in which they communicated to us the information they possessed relative to the subject of our inquiries.

We are, gentlemen, very respectfully,
Your humble servants,
DAVID HOSACK.
JOS. BAYLEY.
JOHN H. DOUGLASS.

New-York, September 18*th*, 1811.

To the President and Members of the Board of Health.

Extract from the minutes,
J. MORTON, Sec'ry.

The Board of Health of Philadelphia have issued a proclamation, prohibiting all intercourse and communication between the city of Amboy and the city and county of Philadelphia, on account of a pestilential disease prevailing in the former city. Persons, after leaving Amboy, must perform fourteen days quarantine before they can be admitted into Philadelphia.—*Public paper of September* 20.

Board of Health, September 24, 1811.

A report of Jacob Lewis, Esq. Recorder of the city of Amboy, dated 21st instant, was read, which stated, that there had been four deaths of the yellow fever in the said city, that no new cases had occurred since the 16th, and that all the sick were now convalescent.

September 27, 1811.

A letter from the Mayor of Amboy, to the Honourable De Witt Clinton, President of the Board of Health, together with an affidavit of James Seguine, were read, and directed to be entered on the minutes. They were as follows:

To De Witt Clinton, Mayor of the City of New-York,

Sir,

I have observed in the newspapers, your proclamation, prohibiting all intercourse between the cities of New-York and Perth Amboy; also the report of the Committee appointed by the Board of Health, to investigate the nature and origin of the disease prevailing in this city. I had not the honour of seeing Doctors Bayley, Douglass, and Hosack, but approve very much of their report respecting the fever originating in one of the two mentioned vessels: more fully to prove this, I send you the affidavit of Captain James Seguine, who piloted the brig Ocean out of this port, on the 24th instant. Also, as it may be satisfactory to the citizens of New-York, I inform you, that the Resident Physician, Nathaniel Manning, has reported to me, that there has been no new cases for two days past.

I am sir, your obedient humble servant,

JOHN ANGUS, Mayor.

Perth Amboy, September 26, 1811.

DEPOSITION.

James Seguine personally appeared before me, John Angus, Mayor of the city of Amboy, and deposed and said, that he was employed as Pilot on board the brig Ocean, Sutton, commander; that on the 24th of the present month, he piloted the said brig out of the port. Previous to leaving her, Captain Sutton, or the mate, gave permission to him (Seguine) to collect the coffee which was scattered in the bottom of the vessel, for which purpose he went below, when he immediately heard violent groaning by some sick person or persons: being alarmed, immediately repaired on deck to inquire into the cause, or whence came the groans, when he was answered by the crew, that it was the boy, who then lay sick in the steerage, and very far gone, upon which the deponent left the vessel without collecting the coffee.

JAMES SEGUINE.

Perth Amboy, September 25, 1811.

AMBOY—*Report of the intendant Physician of that city, to the Corporation.*

September 29, 1811.

No new cases of yellow fever have occurred since last Monday week; one death yesterday; all others are entirely recovered, or are convalescent. We have had five deaths of decided cases of yellow fever; one doubtful; viz. James Compton, James Kearney, Joseph Compton, Miss Ann Taylor, and William Craig; Mrs. Crowel a doubtful case. We have no instance of any person taking the fever from those they attended, except in that part of the town which became infected by the vessel that introduced the malady. The above vessel having sailed, and all others ordered off, no more cases are apprehended.

(Signed) J. LEWIS, Recorder.

General Morton, C. C.

October 10, 1811.

The President laid before the Board a letter from the Mayor of the city of Perth Amboy, in the following words.

"Perth Amboy, October 7, 1811.

"Sir,

"I have the pleasure to inform you, that the fever which has been prevalent here, has subsided; no new case having occurred for fifteen days past, and no person being now sick with that complaint. The last report of the Physician is enclosed.

"I am respectfully, your's, &c.

"JOHN ANGUS."

The report enclosed was,

"Report for Saturday, October 5, 1811: Of the cases of malignant fever, every case subsided, and not necessary to report hereafter.

"NATHANIEL MANNING.

"Mr. John Angus, Mayor of the city of Perth Amboy."

Whereupon resolved, that it be recommended to his honour the Mayor, to issue his proclamation, restoring the intercourse between the two cities.

The Mayor accordingly issued a proclamation to that effect, on the 10th of October, 1812.

The foundation and constitution of the Military Academy established by Congress, at West-Point, in the state of New-York; in a letter from the Hon. Samuel L. Mitchill, to a young gentleman wishing to engage in the military profession: dated Washington, May 10, 1812.

You ask of me, my young friend, information concerning the institution founded by the American government, for the advancement of military education. I cheerfully offer you such a history of the seminary as my memory contains. It is however but a sketch; but may, perhaps, answer your purpose, until some one of the worthy and scientific gentlemen who have been instructed there, shall give us further intelligence concerning so excellent a school.

It was not, I think, until May 1794, (5 Washington) that a law was enacted for raising a corps of artillerists and engineers. It was to consist of seven hundred and sixty-four non-commissioned officers, privates, and artificers, to serve as privates and musicians; with a proportion of commissioned officers to command them. The president was authorised to procure the books, instruments, and apparatus necessary for the corps, and they were enlisted for three years.

In April, 1798, (2 Adams) an additional regiment of artillerists and engineers was authorised to be raised, for five years; and the secretary at war was directed to provide, at the public expense, under the direction of the president, all necessary books, instruments, and apparatus for the use and benefit of the regiment.

Afterwards, in the act passed July 16th of the same year, for augmenting the army of the United States, and for other purposes, the president was authorised by its seventh section to appoint four teachers of the arts and sciences, necessary for artillerists and engineers, with allowance to them of fifty dollars monthly pay, and two rations *per diem*.

This useful establishment was continued by the twenty-sixth, twenty-seventh, and twenty-eighth sections of the statute fixing the military peace establishment, which received the executive approbation on the 16th March, 1802. (2 Jefferson.)

The president was thereby authorised and empowered to organize and establish a corps of engineers, to consist of officers and cadets; and to make such promotions, with a view to particular merit, and without regard to rank, as to amount to one colonel, two majors, four captains, four first lieutenants, and four second lieutenants, provided the whole number of the corps should at no time exceed twenty officers and cadets.

The corps when formed was stationed and fixed at West-Point, in the state of New-York, and there established as a MILITARY ACADEMY. But the engineers, assistant-engineers, and cadets of the corps, were at all times subject to do duty in such places and on such services as the president of the United States should direct.

It was enacted that the principal engineer, and during his absence, the next in rank, should preside over the academy, under the direction of the chief executive magistrate of the nation, and the secretary at war was authorised, at the public expense, and under such regulations as the president should make, to procure the books, implements, and apparatus necessary to put the plan into operation.

Business was begun, and progressed with promises of so much advantage, that by an additional act, passed 28th February, 1803, the president was empowered to appoint one teacher of the French language, and one teacher of drawing, to be attached to the corps of engineers; whose pay and emoluments should not exceed those of a captain in the line of the army. By the same law, it was provided, that the commanding officer of the corps might enlist for a term not less than three years, one artificer and eighteen men, to aid in making the practical experiments, and for other purposes. These were to receive the same pay, rations, and clothing as the artificers and privates in the army, and the same bounty when enlisted for five years. They were also to be subject to the rules and articles of war.

Money was afterwards appropriated for three successive years, to purchase maps, plans, books and instruments, jointly for the war department and the military academy. These years were, if I mistake not, 1803, 1804, and 1805. The respective sums were two thousand, one thousand, and five hundred dollars.

It is worthy your notice, that the military academy has not been mentioned in any of the appropriation laws from 1806 to 1812, inclusive. This will be evident to any person who examines the several acts. On the 18th April, 1806, the money appropriated to purchase maps, plans, books and instruments for the war department alone, was one thousand and five hundred dollars; on the 16th January 1807, fifteen hundred; on the 3d March, 1808, a like sum; on the 3d March, 1809, two thousand and five hundred; on the 2d March 1810, an equal sum; on the 6th February 1811, a similar amount; and lastly on the 21st February 1812, the same number of dollars. During these seven years, the aggregate amount of the money appropriated for these purposes, is fourteen thousand and five hundred dollars. You cannot fail to be satisfied of the generosity of the legislature; and, when you consider, that during this term, no part of the appropriation has been given to the Military Academy, you will be strongly impressed with the variety, extent and value of the library and apparatus at the war department.

The Academy having for several years been in a less prosperous condition than formerly, from a concurrence of causes which I shall not now particularize, several attempts have been made to revive it. New and important regulations were at length introduced by the act of April 29th, 1812, (4 Madison,) both into the corps of engineers and the military academy.

To that corps, as heretofore established, were added two captains, two first and two second lieutenants, one paymaster, four sergeants, four corporals, one teacher of music, four musicians, nineteen artificers, and sixty-two men. A company of bombardiers, sappers, and miners, was formed out of them.

The Military Academy now consists of the corps of engineers, and of the following professors and instructors; first, a professor of natural and experimental philosophy, to receive the pay and emoluments of a lieutenant colonel; secondly, a professor of mathematics, to have the pay and emoluments of a major; and thirdly, a professor of the art of engineering in all its branches, with the pay and emoluments of a major. Each of these professors may have an assistant professor, to be selected from the most promising characters among the officers and cadets, and entitled respectively to the pay and emoluments of captains. The teaching of the French tongue and of drawing, are continued, and provided for as on the former establishment. It is a pity there is not a distinct professorship of chemistry; it may, nevertheless, be taught by an able instructor, as a science appertaining to experimental philosophy.

The cadets already appointed, and to be hereafter appointed, are increased to two hundred and fifty; and may, at the president's discretion, be attached to the military academy, and subjected to its regulations; they may be arranged into companies of non-commissioned officers and privates for the purposes of military instruction, and the knowledge of encampments. Candidates for cadet-ships must not be younger than fourteen, nor older than twenty-one years; and must be well versed in reading, writing, and arithmetic, before they receive appointments from the president. They shall sign articles, by consent of their parents or guardians, engaging themselves to serve five years, unless sooner discharged, and they shall be allowed for pay, the sum of sixteen dollars per month, and two rations per diem.

After the cadets shall have received regular degrees, from the academical staff, in consequence of having risen through all the classes, they become qualified to obtain commissions in any corps for which they may be judged competent. These are the rewards and honours which students may attain by proficiency and good conduct, and, indeed, they are some of the most powerful incentives that can be applied to the human mind; for, besides the subsistence which is provided by this country for the young votary to science and arms, he has in bright prospect every thing that professional fame and preferment can afford: no institution in the United States holds out to its alumni any encouragement that deserves to be compared with this.

Twenty-five thousand dollars are, by this recent and liberal statute, appropriated for erecting buildings, and for procuring an apparatus, a library, and all necessary implements; and, likewise, for defraying such contingent expenses as in the opinion of the president of the United States may be expedient for the Academy. With this, a handsome beginning may be made, and after the business shall have been commenced, I do not entertain a doubt that under a sound, moral, and intelligent system of tuition, congress will, from time to time, extend to it a munificent and dignified patronage. For I must own to you, I look to this very college, as the place where a portion of our most promising youth is to be trained up in the discipline and lore that shall qualify them, in a peculiar manner, to assert and defend their country's rights.

West-Point, that distinguished post in the Highlands of New-York, and the station which is capable of commanding the Hudson, as it passes through that rough and ragged region, is the spot at which this national institution is to be continued in its new form, and with its enlarged endowments.

The objections that have been made to the place, as too remote from society, will soon vanish. It will be easy to extend to it a branch of the general post-office, and thereby afford to all the residents, the advantages of regular and seasonable intelligence. In the progress of improvements, the old roads may be mended, and new ones traced through the passes of the hills. A market will gradually be formed, whereby all manner of necessaries will be brought into the neighbourhood, at fair prices. And during the navigating season, the steam boats, in addition to the other packets and vessels, present uncommon conveniences, for the conveyance of persons and things.

That you may have some idea of the situation of the school to which you intend to connect yourself, I may mention a few particulars. The mountains are of the primitive order, and composed of gray granite; they are interspersed with iron ore, much of which is magnetical. Professor Partridge has ascertained their greatest height to be about one thousand four hundred feet. Yet lofty and compact as they are, the river smoothly penetrates them, without a cataract, and even without rapids: their picturesque scenery has been beautifully delineated by Robertson in his prints; by M'Kinnen in his verses; and by Knight in his geographical surveys. The place is memorable for the elevated fortress which overlooks the plain, named in honour of Putnam; for the defection and treachery of Arnold, in 1780; and for the detection and defeat of that officer's conspiracy with the enemy, by Washington.

Should you wish to make excursions, the site of Fort Montgomery, a few miles to the southward, invites the curiosity of the military student. This work is memorable for the death of Mungo Campbell, and several other British officers, who were slain in the assault made upon it in 1777; and has been further signalized by Trumbull in the painting he executed, of the scene where valiant resistance was made to the invaders on that occasion, by Clinton. About a league further down the river, you find the famous station called *Stony-Point*, one of the outposts of the British forces, while they held the city of New-York, during the revolutionary war. The storming of this fortification by Wayne, is such a brilliant and successful achievement, that you will tread here, almost, as if you walked upon hallowed ground. From this eminence your eye may trace the road travelled toward *Tarrytown*, by Andre, to the fatal spot where he was arrested; and behold the precipices of basalt and trapp near Tappan, where he was executed as a spy.

Bending your course to the north, you soon arrive at Newburgh, distinguished for the cantonments of the American army; and for the quelling of a dangerous sedition that had been excited among the continental troops in 1781, by a writer of anonymous letters; and, on the opposite bank you may land in the precincts of Fishkill, a village selected for the seat of government during several years of that eventful period which was terminated by the peace of 1783. But it is time to bring my epistle to an end.

I need not add more than the obvious remark, that the august bird which has been adopted by our people as their emblem, constructs his eyry among the neighbouring crags; and that the candidate for usefulness and renown will imbibe the principles and practice of his profession, beneath the wings of the *Great White Eagle*, who wheels majestic over his head.

With a firm reliance on your industry and enterprise, I anticipate the time when you will come forth, crowned with the well earned wreath of your *alma mater*, and prepared to engage in the arduous service of your country. In the words of Cicero, *jubeo te bene valere.*

SAMUEL L. MITCHILL.

Canal Navigation.

We continue the publication of the official documents relative to the improvement of the inland navigation of the state of New-York. We have also inserted the act on the same subject, recently passed by our state legislature. The able and satisfactory report of the Commissioners, dated March 1812, will appear in our next, when we shall have laid before our readers all the official proceedings on this highly interesting and important subject. ED.

Copy of the Application made to the different States and Territories.

SIR,

By a law of the state of New-York, of which we do ourselves the honour to enclose to your excellency an exemplified copy, we are directed to apply to the Congress of the United States, or to the Legislature of any State or Territory, to co-operate and aid in opening a communication, by means of a canal navigation, between the great lakes and Hudson's river.

The good sense of the state over which you, sir, preside, will readily perceive the benefit which must result from such navigation. But whatever may be the peculiar advantages which locality may give to particular parts of the United States, we feel a conviction, that the general advantage to the whole nation is of such preponderating influence, as to render the present object of principal, if not exclusive, concern to the national legislature.

The state of New-York is not ignorant of the special benefit which she might secure to herself by holding in her own hands the best communication between the territory around the lakes, and the Atlantic ocean; neither is she so devoid of enterprise or resource as not to open the abundant source of influence and revenue.

But she is disposed rather to grant, than withhold accommodation, and not only to enter into every reasonable stipulation, but to give the aid of her legislative authority to those measures which, in prosecution of the business, may be found needful.

There are two modes, sir, by which your state may contribute to this great work; by pecuniary appropriations, and by that influence in the councils of the union, to which she is entitled. The former mode will certainly not be unacceptable. Whether the money granted shall be in the form of a gift or a loan, will, of course, depend on the ulterior consideration, whether the canal is for ever to be free, or whether, being made at the expense of New-York, it shall be subject to such transit duties as, from a regard to her special interest or convenience, she may, from time to time, think proper to impose. In the former case, the bounty of your state will be patriotically offered and frankly received. Loans may, in both cases, be useful.

But what appears to us most suitable to the occasion, and which, therefore, we most earnestly solicit, is, the exercise of your state influence in the public councils of our country, to provide for the whole expense of this canal; which, to use the pertinent expressions of the law under which we act, will encourage agriculture, promote commerce and manufactures, facilitate a free and general intercourse between different parts of the United States, tend to the aggrandizement and prosperity of the country, and consolidate and strengthen the union.

We take the liberty to request that your excellency will have the goodness to communicate this application to the Legislature of your state, and give it that aid which it may, in your opinion, deserve.

With perfect respect,
We have the honour to be, &c.
GOUV. MORRIS,
S. V. RENSSELAER,
DE WITT CLINTON,
SIMEON DE WITT,
W. NORTH,
THOMAS EDDY,
ROB. R. LIVINGSTON.

Albany, March, 1812.

Copy of a Letter to the President of the United States.

SIR,

The enclosed exemplification of a statute, passed the eighth of last April, will show that we are empowered to make application, on behalf of the state of New-York, to the Congress of the United States, on the subject of a canal between the great lakes and Hudson's river.

An object of such general concern, seems to be within the scope of that information which is to be communicated to the National Legislature by the President of the United States, and, therefore, we deem it our duty to place it in your hands.

We do not assign reasons in its support, because they will not escape your penetration; neither do we solicit your patronage, because we rely on your patriotism. It is submitted to your consideration in the most simple form, and we have charged two of our members, Gouverneur Morris and De Witt Clinton, to give you, sir, in presenting this letter, the personal assurance of that respect, with which

We have the honour to be,
Your most obed't serv'ts.

The following Documents accompanied the message of the president of the United States, on the 23d of Dec. 1811.*

WHEREAS it is expedient to open by inland navigation, as soon as circumstances will permit, the various communications which may be effected by the rivers, sounds, bays and lakes of the United States, between the northern and southern, the eastern and western parts of their territory, and especially a communication along the sea cost, from Boston or Barnstable bay, to Naraganset or Buzzards bay, from Rariton river to Chesapeake bay, and from Chesapeake bay to Albemarle sound; also, a communication from Lake Champlain to Hudson's river, from Lake Erie to Hudson's river, the Susquehannah, the Muskingum and the Wabash, from Lake Michigan to the Illinois, from the Susquehannah to the Schuylkill and the Delaware, from the Roanoke, above its great falls, to the Chowan or Mehevrin, from the Tennessee to the Tombigbee, from the Cooper river and Black river to the Santee, and from the Savanna to the Tennessee; also, to construct locks round the falls of the Ohio, and to meliorate the navigation of the Potomac above the falls.

Be it therefore enacted, &c. That the lands, hitherto unappropriated, in the Michigan territory, and that part of the Indiana territory lying north of the fortieth degree of latitude, be, and they hereby are appropriated to the said several objects, and to such others of the same or a similar kind, as the wisdom of Congress may hereafter designate.

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* See Register, vol. 2. p. 450.

II. *And be it further enacted,* That one million acres of land, part of the tracts above mentioned, shall vest in and belong to the state of Massachusetts, so soon as a canal navigable for vessels drawing six feet water, shall be opened between the Boston and Naraganset bays, or between the Barnstable and Buzzard bays; on condition, nevertheless, that no tax, toll or impost, shall be levied or taken for the passage of such vessels on the same canal, other than what may be needful to pay the annual expense of superintending and keeping the same in repair.

III. *And be it further enacted,* That five hundred thousand acres of land, part of the tracts above mentioned, shall vest in and belong to the state of New-Jersey, so soon as a canal, navigable for vessels drawing six feet water, shall be opened between the Raritan and Delaware rivers; on condition, nevertheless, that no tax, toll or impost shall be levied or taken for the passage of such vessels on the same canal, other than what may be needful to pay the annual expense of superintending and keeping the same in repair.

IV. *And be it further enacted,* That four hundred thousand acres of land, part of the tracts above mentioned, shall vest in and belong to the state of Delaware, so soon as a canal, navigable for vessels drawing six feet water, shall be opened between the Delaware river and Chesapeake bay; on condition, nevertheless, that not more than twenty cents per ton shall be levied or taken for the passage of vessels on the same canal.

V. *And be it further enacted,* That two hundred thousand acres of land, part of the tracts above mentioned, shall vest in and belong to the state of Virginia; so soon as a canal, navigable for vessels drawing six feet water, shall be opened between the Chesapeake bay and Albemarle sound; on condition, nevertheless, that no tax, toll or impost shall be levied or taken for the passage of such vessels on the same canal, other than what may be needful to pay the annual expense of superintending and keeping the same in repair.

VI. *And be it further enacted,* That four hundred thousand acres of land, part of the tracts above mentioned, shall vest in and belong to the state of New-York, so soon as a canal, navigable for flat bottomed boats of twenty tons burthen, shall be opened between the Lake Champlain and the tide waters of Hudson's river; on condition, nevertheless, that no tax, toll or impost shall be levied or taken for the passage of such boats on the same canal, other than what may be needful to pay the annual expense of superintending and keeping the same in repair.

VII. *And be it further enacted,* That four million acres of land, part of the tracts above mentioned, shall vest in and belong to the said state of New-York, so soon as a canal shall be opened from lake Erie to Hudson's river, not less than sixty-three feet wide on the top, forty-five feet wide at the bottom, and five feet deep, (and, if practicable, along an inclined plane, descending not more than six inches in a mile,) to Hudson's river, or a bason within four miles thereof: on condition, nevertheless, that no tax, toll or impost shall be levied or taken for the passage of boats not exceeding sixty feet long, eighteen feet wide, or drawing more than three feet of water on the same canal, other than such as may be needful to pay the annual expense of superintending and keeping the same in repair.

VIII. *And be it further enacted,* That one hundred thousand acres of land, part of the tracts above mentioned, shall vest in, and belong to the state of Pennsylvania, so soon as a canal, navigable for boats of ten tons, shall be opened between the lake Erie and the Susquehannah river.

IX. *And be it further enacted,* That one hundred thousand acres of land, part of the tracts above mentioned, shall vest in, and belong to the state of Ohio, so soon as a canal navigable for boats of ten tons, shall be opened between the lake Erie and the Muskingum; and that one hundred thousand acres of land, also part of the tracts above mentioned, shall vest in, and belong to the said state of Ohio, so soon as a canal, navigable for boats of ten tons, shall be opened from the lake Erie to the Wabash; on condition, nevertheless, that no tax, toll or imposts shall be levied or taken for the passage of such boats on the said canals, or either of them, other than what may be needful to pay the annual expense of superintending and keeping them in repair respectively.

X. *And be it further enacted*, That one hundred thousand acres of land, part of the tracts above mentioned, shall vest in, and belong to the state of New-York, so soon as a canal, navigable for boats of ten tons, shall be opened from the lake Michigan to the Illinois river; on condition, nevertheless, that no tax, toll or impost, shall be levied or taken for the passage of such boats on the same canal, other than what may be needful to pay the annual expense of superintending and keeping the same in repair.

XI. *And be it further enacted*, That eight hundred thousand acres of land, part of the tracts above mentioned, shall vest in, and belong to the state of Pennsylvania, so soon as a canal, navigable for boats of ten tons, shall be opened from the Susquehannah to the Schuylkill, and from the Suchylkill to the Delaware.

XII. *And be it further enacted*, That three hundred thousand acres of land, part of the tracts above mentioned, shall vest in, and belong to the state of North-Carolina, so soon as a canal, navigable for boats of ten tons, shall be opened from above the great falls of the Roanoke river, to the Chowan or Meherrin rivers; on condition, nevertheless, that no tax, toll or impost, shall be levied or taken for the passage of such boats on the same canal, other than what may be needful to pay the annual expense of superintending and keeping the same in repair.

XIII. *And be it further enacted,* That two hundred thousand acres of land, part of the tracts above mentioned, shall vest in, and belong to the state of Tennessee, so soon as a canal, navigable for boats of ten tons, shall be opened from the Tennessee river to the Tombigbee river.

XIV. *And be it further enacted,* That two hundred thousand acres of land, part of the tracts above mentioned, shall vest in, and belong to the state of South-Carolina, so soon as a canal, navigable for boats of ten tons, shall be opened from the Cooper river and the Black river to the Santee.

XV. *And be it further enacted,* That one million acres of land, part of the tracts abovementioned, shall vest in, and belong to the state of Georgia, so soon as a canal, navigable for boats of ten tons, shall be opened from the Tennessee to the Savannah river; on condition, nevertheless, that no tax, toll or impost, shall be levied or taken for the passage of such boats in the same canal, other than what may be needful to pay the annual expense of superintending and keeping the same in repair.

XVI. *And be it further enacted,* That three hundred thousand acres of land, part of the tracts above mentioned, shall vest in, and belong to the state of Kentucky, so soon as proper locks shall be constructed to take round the falls of the Ohio, vessels of tons; on condition, nevertheless, that no tax, toll or impost shall be levied or taken for such vessels passing through the said locks, other than what may be needful to pay the annual expense of superintending and keeping the same in repair.

XVII. *And be it further enacted,* That two hundred thousand acres of land, part of the tracts above mentioned, shall be, and the same are hereby granted to the company incorporated by the states of Maryland and Virginia, for improving the navigation of the Potomac, to be applied by the said company in ameliorating the said navigation.

XVIII. *And be it further enacted*, That none of the said lands shall be sold or disposed of for a price less than two dollars per acre; neither shall any settlement be made thereon until the Indian title shall be regularly and fairly extinguished. But the said several tracts may be severally and respectively pledged as a security for loans, the amount whereof, shall be employed for the purposes respectively designated.

XIX. *And be it further enacted*, That the public faith be, and the same hereby is pledged for the redemption of the capital of loans, made equivalent to the lands, (at the rate of two dollars per acre,) granted in the second, third, fourth, fifth, sixth, seventh, ninth, tenth, twelfth, fifteenth, and sixteenth sections of this statute, at the end of twenty years from the period when such several loans shall have been made. Provided, that the money borrowed shall have been justly applied to the objects respectively specified, and that the tracts so granted, shall be respectively retroceded to the United States. It is, nevertheless, to be understood, and is hereby declared and enacted, that if the state, to which any such cession is hereby made, shall, within ten years, declare the intention to accept the grant of land finally, and relinquish the pledge of public faith hereby given, such grant shall be final, and the pledge of faith shall be void.

XX. *And be it further enacted*, That the President of the U. S. for the time being, shall, on due application to him made, designate, from time to time, by metes and bounds, the several tracts contemplated by the provisions of this statute, and which are not herein designated; and the acceptance of any state of any grant, shall be considered as an agreement to the condition which is hereby annexed to such grant.

XXI. *And be it further enacted,* That a tract containing four million, five hundred thousand acres, in a parallelogram, extending from east to west, across the north end of the Indiana territory, shall be, and hereby is appropriated to the conditional grants herein before made to the state of New-York, which parallelogram shall be divided, by meridian lines, into three several tracts, of which the eastern tract, containing four hundred thousand acres, shall apply to the object specified in the sixth section: the middle tract, containing four million acres, shall apply to the object specified in the seventh section; and the western tract, containing one hundred thousand acres, shall apply to the object specified in the tenth section of this statute.

An Act further to provide for the improvement of the Internal Navigation of the State, passed 19*th June,* 1812.

Be it enacted by the people of the state of New-York, represented in senate and assembly, that the commissioners mentioned in and by the act, entitled, " an act to provide for the improvement of the internal navigation of the state, passed the 8th day of April, 1812, to wit, Gouverneur Morris, Stephen Van Rensselaer, De Witt Clinton, Simeon De Witt, William North, Thomas Eddy, Peter B. Porter, Robert R. Livingston, and Robert Fulton, be, and they are hereby authorized and empowered, on behalf of this state, upon such terms and conditions as they shall deem reasonable, to purchase all the rights, interest, and estate, of the "President, Directors, and Company of the Western Inland Lock Navigation, in the state of New-York," of, in, and to the inland waters of this state, together with the locks, canals, lands, and other property which may be vested in, or which may have been acquired by the said president, directors, and company, under or by virtue of any law of this state, so as to procure to the people of this state, a conveyance or surrender of all the rights, interest, and estate of the said corporation; and in case of such conveyance or surrender being made, it shall and may be lawful for the said commissioners, and they are hereby required to take the charge and management of the said locks, lands, and all other property so by them to be purchased as aforesaid, on behalf of the people of this state, with the like powers of appointing toll collectors and other agents, to exact the same tolls to the use of the people of this state, and to make all such other rules and regulations in regard to the same, as the president, directors, and company of the western inland navigation in the state of New-York, can or may now lawfully make or establish; and that every person who shall, after such conveyance or surrender, do any trespass or other injury, to the said canals, locks, lands, or other property aforesaid, or shall violate any of the rules and regulations, so as aforesaid to be established by the said commissioners, such person so offending, shall be liable to the same penalties, and shall pay the like damages as such offenders would now be liable to, for the like acts, under the by-laws and regulations of the said corporation, and the laws of this state, to be recovered in the name of the said commissioners, to the use of the people of this state.

Provided, that nothing in this act contained, shall authorize the said commissioners to make any other than a conditional purchase of the said president, directors, and company, to become absolute when the said commissioners shall have satisfactory information from some experienced engineer, by an actual examination, that the accomplishment of the contemplated canal is practicable, and when the said commissioners shall be authorized by an act of the legislature, to commence their operations for opening said canal.

2. *And be it further enacted*, That the said commissioners be, and they are hereby authorized, to procure any volun-

tary cessions, or grants of any lands, to the use of the people of this state, from any person or persons, bodies politic or corporate, who may be inclined to make the same, for the purpose of the contemplated inland navigation from Lake Erie to Hudson's river, or for establishing a fund to be applied towards the accomplishment of the said object. *And whereas* it appears by the report of the said commissioners, lately presented to the legislature, that a favourable opportunity now occurs for procuring a loan of money on the credit of this state; and whereas it is desirable that this state should possess the means of effectually prosecuting the important object of opening said inland navigation, if upon full examination by a competent and practical engineer, and mature deliberation, the legislature shall hereafter deem it expedient to undertake that interesting work. Therefore,

3. *Be it further enacted*, That the aforesaid commissioners be, and they are hereby authorized and empowered, on behalf of this state, to borrow a sum of money, not exceeding five million of dollars, upon a loan for not less than fifteen years, and at a rate of interest not exceeding six per centum per annum, exclusive of incidental expenses of negotiating said loan; and the said commissioners are hereby authorized, to pledge the faith of this state, for the payment of such interest, and for the reimbursement of said principal sum, so to be borrowed as aforesaid.

4. *And be it further enacted*, That the sum so to be borrowed by the said commissioners, be invested, in the name of the people of this state, in public stock, or such other fund or funds, as in their opinion, by and with the advice and consent of the person administering the government of this state, may be most safe and productive, with full power in the said commissioners, from time to time, in their discretion, and with the consent of the person administering the government of this state, to control the monies so invested, and the

interest thereof, by transferring the same, or any part thereof, from one fund to another, and upon such securities and assurances, as they may deem proper, on behalf of the people of this state.

5. *And be it further enacted,* That it shall be the duty of the said Commissioners, and they are hereby required, punctually to pay the interests, which from time to time shall accrue upon the monies so to be borrowed as aforesaid. And the said commissioners shall annually make a report to the legislature of this state, exhibiting a particular account of the monies so to be borrowed as aforesaid, of the fund or funds in which the same shall be invested, and of all payments, receipts, and expenditures relating thereto.

Extract of a letter from a Member of the national institute of Paris, to a correspondent in New-York, dated Paris, November 2d, 1811.

"I have just received the second edition of the *Catalogue of the Elgin Garden,* and also the *Statement of Facts.* All our professors admire the constant exertions made for the promotion of medical science. It reflects much honour upon the state of New-York, that they have at length taken charge of an establishment which they have found one among themselves able to raise, and which renders science more easy and more pleasing to be acquired. We all give our thanks to Dr. Tillary and Dr. Bard, who first recommended the subject to public attention, and to the senator Clinton and Dr. Mitchell, &c. &c. who were its advocates in the legislature. The whole will be noticed in the annals of the Museum of Natural History in Paris," &c.

Botanic Garden of the State of New-York.

We again have the pleasure to state, that, through the spirited exertions of M. Thouin, of Paris, aided by the kind attention of J. B. Warden, United States consul at that place.

important additions have recently been made to this establishment, by several extensive collections of seeds, of rare and valuable exotic plants, from the Jardin des Plantes.

Scudder's American Museum.

Every cultivator of the science of natural history, and every lover of rational and useful knowledge, cannot but be gratified with the zeal and industry of the proprietor of this establishment, and the great success which has thus far attended his exertions, in behalf of the laudable purposes to which they are directed. Though little more than two years have elapsed since the formation of the American Museum, such has been the ardour with which Mr. Scudder has pursued his object, as already to have formed a collection of materials, deservedly considered among the most respectable of the kind in the United States. The uncommon abilities which he displays in preparing the numerous subjects in the different branches of natural history, would do honour to any artist. We forbear, at this time, an enumeration of the various specimens of beasts, birds, insects, serpents, &c. His cabinet will excite the attention of the most indolent, and give instruction to the most improved mind.

Chiappi's Anatomical Representations.

The city of New-York has recently received a valuable accession to medical science, by the arrival of Mr. Joseph Chiappi, anatomist, of Ancona, Italy, and formerly *wax sculptor* of anatomy for the university of Ferrara. This ingenious gentleman has long been known in his native country for various specimens of skill in that department of the profession to which he has devoted himself; and his merits as an artist are acknowledged to be of the highest order. During his short residence among us, he has added to his reputation, and has lately completed several highly valuable preparations.

Among them is an exhibition of the human ear, on an enlarged scale, which illustrates, in the happiest manner, the intricate structure of this delicately organized part of the human body. This valuable preparation and example of his skill, is now added to the private cabinet of Dr. Hosack, of this city.

New-York Historical Society.

The New-York Historical Society are preparing a second volume of their *Collections* for the press.

Abstract of the Bill of Mortality, published by the Board of Health of Philadelphia, during the years 1808 *and* 1809.

DEATHS IN EACH MONTH, DURING 1808.

NAMES.	ADULTS.	CHILDREN.
January	91	45
February	73	50
March	91	63
April	96	73
May	81	98
June	95	132
July	111	263
August	109	188
September	88	97
October	71	83
November	81	71
December	59	62
Total	1046	1225

DEATHS IN EACH MONTH, DURING 1809.

NAMES.	ADULTS.	CHILDREN.
January	73	57
February	67	51
March	95	46
April	80	56
May	66	84
June	82	102
July	53	131
August	183	107
September	87	80
October	91	85
November	83	106
December	63	76
Total	1023	981

Bill of Mortality, for Portsmouth, New-Hampshire, for A. D. 1809. *Communicated to the Editors, by* Lyman Spalding, M. D.

Complaints.	*Age.*	*No.*
Apoplexy	78 years	1
Atrophy	1w 76y 3d 2, 5, 68y 2m 2, 47y 10d 4m 56, 2y	13
Chlorosis	13 years	1
Cholera of Infants	4m 2, 2y 1m 1, 1, 1y	7
Consumption	33, 55, 36, 23, 63, 35, 64, 58, 20, 21, 42, 37, 25, 51, 69, 40, 15, 41, 38, 41, 23, 28, 17, 25, 44, 28, 34y	27
Convulsions	5m 2y 6m 4y	4
Croup	2 years	1
Dropsy	40, 60, 2 years	3
Dropsy in the Brain	2, 13y 5m 2, 5, 4, 2y 3m	8
Erythema	3m 1w	2
Fever inflammatory	5, 4 years	2
petechiæl	9 years	1
puerperel	18, 44 years	2
pulmonic	52, 75, 78, 5y 4 months	5
Gout	74 years	1
Hæmorrhage	69, 52 years	2
Hooping Cough	1, 3 years	2
Inflammation	46 years	1
Mortification	53, 67 years	2
Old Age	89, 90, 77, 89, 90, 79, 78 years	7
Palsy	58, 74, 87, 60 years	4
Phrenitis	50 years	1
Quinsy	7m 1, 1 year	3
Schirrus liver	25 years	1
Casualties.		
Burnt	75, 4, 1 year	3
Drowned	2, 7 years	2
Overlaid	2 months	1
Run over by a waggon	45, 5 years	2
Suicide	19, 25 years	2
Births.		
Males 130 } 252		
Females 122 }		
Still born. 6		
Marriages. 64		
	Total	111

Portsmouth, the capital of the state of New-Hampshire, situated forty-three degrees five minutes north latitude, and six degrees, twenty-six minutes east longitude from Washington, contains six thousand nine hundred and thirty-four inhabitants.

The month of January exhibited the coldest, as well as the most remarkable change of weather, ever recorded in New-Hampshire. At 12 o'clock at noon, of the 18th, the thermometer was at forty-two degrees, and at 12, the 19th, it had fallen 12 degrees below zero. It fluctuated between seven and fourteen degrees below zero, from the 19th to the 22d. We do not find that either this sudden change, or extreme cold weather, had any material effect on the health of our citizens,

Observations on the Weather of the city of New-York, for the months of April, May, and June, 1812.

APRIL.

The weather of the month of April, was remarkable for the great number of rainy and overcast days, and for several very heavy falls of rain, accompanied with strong wind from the N. E. The temperature of the air, though for the most part cold, at several times underwent very considerable changes. On the morning of the 6th, a large quantity of rain fell, followed by snow. On the 9th and 10th, we had more rain. Thermometer on the 10th at 7 A. M. 48, at 3 P. M. at 53, and at 7 P. M. 50. On the morning of the 12th at 7 A. M. thermometer stood as low as 29, at 3 P. M. it rose as high as 53 degrees, at 7 P. M. at 42. On the 19th, at 4 1-2 P. M. we again experienced another very heavy shower, accompanied with thunder, lightning, and hail; many of the hail stones were nearly an inch in diameter. On the 25th, the 27th, and on the 30th, more rain.

MAY.

The weather of May, though more pleasant than that of the preceding month, was not unlike it as to the repeated falls of rain we experienced, and the number of overcast and cloudy days. A small quantity of snow fell on the 4th, accompanied with wind from the N. E. On the night of the 11th, we experienced a very heavy fall of rain. On the 13th, the weather became pleasant. On the 15th, however, and for the seven subsequent days, high winds from the N. E. accompanied with considerable showers of rain. On the 21st, considerable thunder and lightning. During the remaining part of the month, the weather was generally clear, pleasant, and temperate, if we except the 28th, when it rain-ed the greater part of the day. The greatest degree of thermometrical heat, was on the 29th, when the mercury stood at 7 A. M. at 57, at 3 P. M. at 76, and at 7 P. M. at 70 degrees.

JUNE.

June was remarkable for its number of rainy, overcast, and cloudy days, and for the great uniformity in the temperature of the weather. We experienced heavy rains, or showers, not less than on seventeen different days. The mercury in the thermometer generally varied during the month, at 7 A. M. from 58 to 71, at 3 P. M. from 70 to 83, and at 7 P. M. from 64 to 78 degrees. Great quantities of rain fell on the 2d, 8th, 11th, 13th, 16th, and on the 26th, during which times the wind was generally from the eastward.

Quarterly Report of the Diseases which prevailed in the city of New-York, during the months of April, May, and June, 1812.

In the account given in the last number of this work, of the diseases of February and March, it was observed, that owing to the vicissitudes of that season, the diseases exhibited a very unusual violence, and were attended with an uncommon mortality. We have occasion to repeat the same observation relative to the diseases which have appeared since that period, particularly those of April and May, which assumed a character very rarely met with at this season of the year. The month of June has been comparatively healthy.

The diseases of April and May have been chiefly those of an inflammatory type, and intermitting fevers of the tertian form.

Among the inflammatory diseases, *peripneumony* was most predominant, and frequently assumed the typhoid form of that disease, the *peripneumonia notha* of Huxham. The writer of this account has met with some cases of this complaint, both in his own practice and in that of others. As far as he has seen the disease, it exhibited itself in the first stage as purely inflammatory, and was attended with great pain in the chest, especially upon inspiration; a full and active pulse, the tongue covered with a white fur, and other symptoms indicating the most acute inflammation ; and in correspondence with this view of the disease, he employed the lancet freely, not only taking from the patient a large quantity of blood, but repeatedly, and at short intervals : this remedy followed by a large blister applied to the chest, together with evacuations by the bowels, and attention to the other excretions generally effected a cure. In one case, blood-letting was for the first time employed as late as on the seventh and eight days of the disease, and was followed with immediate relief, and the ultimate restoration of the patient ; in another, the lancet was employed seven times during the first four days of the disorder, when the patient also obtained relief.

An opinion, however, has prevailed with many practitioners, that blood-letting was injurious, and accordingly was not employed at all, or very sparingly. We are not surprised at the typhoid termination of those cases, and that they should exhibit all the malignancy of *peripneumonia notha*, even with bloody expectoration, petechiæ, and other symptoms indicating a vitiated state of the whole circulating fluids. In consequence of the petechiæ which appeared in the advanced state of the disease, by many physicians it was denominated *spotted fever !!* In many cases assuredly, those malignant symptoms were exclusively ascribable to the neglect of those remedies which are alone calculated to allay inflammation. In others, the writer is informed, and by those too who are qualified both by education and a practical acquaintance with diseases, that in the upper parts of the city where the inhabitants are numerous, and frequently crouded in small apartments, deprived of the comforts of cleanliness and ventilation, that the disease exhibited the malignant typhoid symptoms before adverted to at so early a stage, that the use of the lancet was prejudicial in most of the cases in which it was employed, and that the only means which were found beneficial, were mild cathartics, blisters, and sudorifics; viz. small doses of calomel, James' powder, and opium, aided by the usual diluents, and in some cases the free use of the Virginia snake root. Among the poor it is also stated to have been a contagious disease, passing in succession through the different families in which it was introduced.

The various conditions of life, doubtless in this, as in other febrile disorders, produce a correspondent variety in its type, degree of violence, and termination. We cannot, however, but express our belief, that in many instances, the timidity of the practitioner has prevented him from employing a sufficiently vigorous practice in the commencement of this disease, and that the more malignant symptoms which supervened, the bloody expectoration, the serous effusion in the lungs, and the petechiæ have been frequently the consequence of the inert practice which has been so generally pursued. It is also to be observed, in correspondence with this remark, that the cynanche tonsillaris, enteritis, &c. have been unusually prevalent, and attended with symptoms of the most acute inflammation, requiring the repeated use of blood-letting and other depleting remedies. Intermittents have also, during the same period, exhibited an uncommon degree of obstinacy, in many instances resisting the bark and other remedies usually employed: in these cases we have prescribed Fowler's arsenical solution with the best effects, especially with children, who are generally unable to take the bark in sufficient quantities to counteract the disease. In those cases in which the bark was prescribed we have had the most satisfactory evidence of the superior quality of that which is selected and prepared by Dr. Sanford,* and which we earnestly recommend to the attention of physicians.

Among other diseases which have presented themselves to our notice, are *uterine obstructions,* which are of frequent occurrence in our variable climate. We are more especially led to notice this subject, as we observe that our practitioners in general do not appear sufficiently attentive to the connection which subsists between this function and the condition of the whole system, particularly as it regards the state of the blood-vessels. No less than ten cases are recorded as occurring in the private practice of the writer during the last month.

In some, the irritation produced by the obstruction, manifested itself in the uterus producing an enlargement of that organ, a sense of bearing down, with pressure on the bladder and rectum, and an acute pain throughout the uterine region, occasionally extending into the lower extremities. In other cases, the stomach was affected with nausea, loss of appetite, and other symptoms of indigestion, followed by general debility and emaciation; in some, it produced frequent returns of pain and spasm in the intestines, showing itself in the form of colic, and sometimes attended with great soreness over the whole abdomen, indicating the more formidable inflammatory symptoms of enteritis. In other cases, the obstruction was followed by pain of the head, vertigo, and numbness of the extremities, and with other symptoms denoting a surcharged state of the blood-vessels in general.

Those cases of obstruction also appeared at different periods of life, in some they arose from sparing and partial menstruation, although returning at the regular periods; in others, from a sudden and total suppression, the consequence of change of dress and exposure to the vicissitudes of the weather at the time the menses were flowing; while in others, and those the most numerous, the complaints induced were the effect of the sudden fulness of the habit succeeding the natural cessation of the catamenia at the ordinary period at which they disappear; and in part occasioned by want of exercise, which is too commonly neglected at that time of life. But in all those cases the most decided advantage was obtained from depletion, especially by means of the lancet, which remedy, in cases of this nature, we observe to be too little attended to by the physicians of this city, particularly the younger members of the profession: their disregard of this remedy manifestly arises, as before observed, from their inattention to the connexion which exists between the general state of the system, and the important function of menstruation; and which connexion, we remark, does not even receive that attention from medical writers, which its importance demands. The celebrated Dr. Denman, whose writings furnish, in general, the best practical guides, upon the subjects of which they treat, does not, in our opinion, attach sufficient value to this function, either as it regards its final cause, or the diseases to which it gives rise.

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* See Medical and Philosophical Register, vol. II. p. 398. 467.

RECENT AMERICAN PUBLICATIONS.

An Essay on the Organic Diseases and Lesions of the Heart and Blood-vessels. From the Clinical Lectures of J. N. Corvisart, first Physician to their Imperial and Royal Majesties, &c. &c. Published under his inspection, by C. E. Horeau, M. D. Surgeon, &c. Translated from the French with Notes. By Jacob Gates, M. M. S. S. 8vo. Boston. Bradford and Read.

The American Medical and Philosophical Register: or Annals of Medicine, Natural History, Agriculture, and the Arts. Conducted by a Society of Gentlemen. 8vo. vols. I. and II. with superior engravings. New-York. C. S. Van Winkle, for the Proprietors.

The Emporium of Arts and Sciences, conducted by John Redman Coxe, M. D. Professor of Chemistry in the University of Pennsylvania. Nos. I. and II. for May and June. 8vo. Philadelphia. Delaplaine.

Documents tending to prove the superior advantages of Rail-ways and Steam-Carriages over Canal Navigation. 8vo. New-York. T. & J. Swords.

A Statistical Account of the Towns and Parishes in the State of Connecticut. Published by the Connecticut Academy of Arts and Sciences. By Timothy Dwight, D. D. &c. &c. 8vo. New-Haven. Walter & Steele.

Dissertation on Chronic Debility of the Stomach. Published by the Connecticut Academy of Arts and Sciences. By Benjamin Woolsey Dwight. 8vo. New Haven. O. Steele & Co.

OBITUARY.

Died, at Canajoharie, on the 25th of May, 1812, in the 75th year of his age, the Rev. Johannes Gros, D. D. formerly pastor of the German Reformed Church in this city, and professor of Moral Philosophy in Columbia College.

At St. Vincents, West-Indies, Alexander Anderson, M. D. superintendent of the Royal Botanic Garden of that place, &c.

TO READERS AND CORRESPONDENTS.

Every effort has been made to render the present number of the Register worthy the support of an enlightened and liberal profession; and it is hoped that its appearance will not disappoint the highest expectations of its numerous and respectable patrons. The *manner* in which the work will in future be executed, is now before the public, and as a specimen of typography, it is believed, will not suffer by comparison with any other similar journal now published. As to the *matter* embraced in the Register, as heretofore, it is derived from *original* sources, and in justice to their correspondents, the editors have no timidity to say, that most of it is of immediate importance and of permanent value.

The editors regret their inability to furnish any other than a profile (though a very striking) likeness of the late Dr. Miller.

A due regard to the rights of intellectual property induces the editors to state, that in several instances, periodical journalists, both abroad and at home, have availed themselves of articles in the Register without the least notice of the work to which they were indebted. In future, the authors of an act so manifestly unjust and dishonourable, need not be surprised to see their names brought before the public.

A Review of Dr. Barton's Collections towards a Materia Medica of the United States will appear in our next.

⁂ Communications for the American Medical and Philosophical Register, are requested to be addressed to Dr. David Hosack, New-York.

THE

AMERICAN

MEDICAL AND PHILOSOPHICAL

REGISTER.

OCTOBER, 1812.

ORIGINAL COMMUNICATIONS.

I.

BIOGRAPHICAL *Memoir of* SAMUEL JOHNSON, D. D. *First President of King's (now Columbia) College, New-York.*[*]

(With an Engraving, by Leney.)

SHORT and scanty as are the earlier annals of the literary history of our country, they are yet sufficient amply to refute, by numerous examples, those charges of intellectual degeneracy and incapacity for mental labour, which have been so wantonly made against our national character. Among those of our ancestors who contributed most largely towards forming and rearing up the intellectual character of the nation, neglected and almost forgotten as their labours now are, may be found many who, amidst all the difficulties of a new and half-peopled country, without the support of patronage, the aid of literary society, or the excitement of applause or opposition, discovered such ardour and ability in the acquisition of knowledge and the investigation of truth, as, under happier circumstances, would have enabled them to aid their cotemporaries, Boerhaave and Linnæus, in extending the dominion of science over the material world; or with Addison, Berkeley, and Butler, to apply the highest powers of intellect, and the richest treasures of human knowledge to their noblest use, the inforcing of moral obligation, and the illustration of divine truth.

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[*] In presenting to the public the life of President Johnson, the Editors think proper to inform their readers, that it is done in pursuance of a plan they had early formed, of embodying in the Register a history of the principal colleges of the United States, with the lives of their most distinguished presidents and professors. Details of this nature, inasmuch as they will necessarily embrace a great variety of matters intimately connected with the literary history of our country, and that too, at a period which, though much neglected, is on many accounts particularly deserving attention, cannot fail to prove highly interesting. In aid of this undertaking, the Editors solicit communications. ED.

But the state of society in which they were placed, forbad them from looking abroad to the great republic of the civilized world as their proper sphere of action; and learning, of which Oxford would have been proud, and talents, of which Europe would have enrolled the possessors high on her list of worthies, were employed in the useful, but humble duties of parish priests, and instructors in provincial colleges; and it is now only from hasty and occasional publications, from hoarded manuscripts, or scanty tradition, that we are enabled to estimate the powers and the acquirements of the Coldens, the Cutlers, and the Edwards of the last century. Among these men, thus ardent and successful in the pursuit of knowledge for its own sake alone, the subject of the present biographical sketch holds a distinguished place.

Samuel Johnson was born at Guilford, Connecticut, October 14th, 1696, and was descended from a respectable family of the earliest settlers of Connecticut. After obtaining such meagre rudiments of the languages as the classical schools of New-England then afforded, he was sent to the college of Connecticut, then first established at Saybrook. Learning was at that time at its lowest ebb in New-England. The first generation of learned puritans had died off, and their immediate successors, educated among a people too intent on their immediate necessities to attend much to the cultivation of general learning, and retaining little of the profound biblical and classic lore of their fathers, were encumbered with all that was useless and pedantic in their course of study. A little Latin, and less Greek, together with the lower and elementary branches of mathematics, comprised all that was valuable in their collegiate course. As to every thing else, their academic course was worse than useless. The logic and philosophy of Aristotle, in the worst form into which they had been tortured by the Dutch and German compilers of those ponderous scholastic systems of universal knowledge, which now slumber undisturbed in their rusty vellum coats on the shelves of our public libraries, were the studies of the highest classes, and indeed all that was at that time considered as worthy the name of learning in the colony.

Just as Mr. Johnson had groped his way through this *palpable obscure*, and had received the usual academic honours, chance threw in his way Lord Bacon's essay on the advancement of learning (perhaps the only copy at that time on this side the Atlantic) the study of which operated in his mind the same change which had already taken place for more than forty years among the learned of Europe, but of which no rumour had yet reached the literati of New-England.

His mind, naturally patient of investigation, and eager for truth, received with avidity the flood of new ideas thus poured in upon it, and he seemed to himself, to use his own expression, "like a person suddenly emerging out of the glimmer of twilight into the full sunshine of open day."

Shortly after this memorable epoch in his life, a considerable addition was made to the college library, among which were the writings of the greatest philosophers, divines, and polite scholars of the age; and the *then* modern works of Newton, Halley, and Woodward; Barrow, South, Tillotson, and Sherlock; Bentley, Addison, and Steele, were seen and read for the first time in the colony of Connecticut. The regularly bred scholar of the present day, surrounded and sated with literary luxury till he turns cloyed with excellence to stimulate his jaded appetite with novelty,

> ——— ———mala copia quando
> Ægrum solicitat stomachum,

can have but a faint idea of the avidity and intense application with which the works of these great masters of reason and just expression were perused, and (to use the happy phrase of Gibbon) *meditated* again and again by Mr. Johnson and a few of the associates of his studies. The discoveries of Newton particularly excited his attention, and, not content with a general and superficial notion of his doctrines, he determined to acquire such a knowledge of mathematics as would enable him thoroughly to comprehend their grounds and reasons, and to enter into the very penetralia of that high-priest of nature. In this design, his usual resolute application made him completely successful. During all this time, he never intermitted his classical studies, or that of the Hebrew, of which he had early acquired the rudiments, and which in after-life became the employment of his leisure, and the solace of his age. Thus richly stored with general science, he was admirably calculated for the station to which he was appointed in 1716, of tutor in the college, then removed to New-Haven, and placed under the direction of the learned Dr. Cutler, as rector or president. Here, for four years, in conjunction with the learned rector, he was actively employed in dissipating the intellectual darkness which had overspread the land, and in directing the observation of their pupils to those lights of science which had just dawned above their horizon. They were particularly successful in introducing the study of mathematics and the Newtonian philosophy, and, strange as such a necessity may seem, in overthrowing the belief of the Ptolemaic system of the world, and establishing the doctrines of Copernicus. Mr. Johnson had always intended the christian ministry as his ultimate profession, and had kept this in view in all his studies. To this he was set apart, according to the forms of the congregational church, in 1720, and settled at West-Haven, where he applied himself to the duties and studies of his profession with exemplary diligence and zeal. He had been educated according to the strictest forms and most rigid orthodoxy of the independent calvanistic church, at that time the only sect known or tolerated in the colony. But in the course of a long and laborious investigation of most of the points in controversy between his own church and that of England, in which he was accompanied by President Cutler and a few other studious friends, he and his friends found reasons to change many of their opinions on those points, and finally to profess themselves members of the church of England.

A more minute history of this singular revolution in opinion, would be out of its place in the pages of a journal devoted chiefly to natural science, but the more curious reader will find it detailed at some length in *Chandler's Life of Dr. Johnson*, a little volume which, for pleasing though somewhat antiquated simplicity of style and high-church zeal and learning, is no unfit companion for Jones's celebrated Life of Bishop Horne, a divine who, in more than one circumstance of his character and studies, strongly resembled the subject of the present biography. This conviction, well or ill grounded, was sincere, for there is not the most distant reason for supposing that interest had any, even the remotest influence on their minds. Every thing was surrendered or put at hazard. Dr. Cutler resigned his presidency, Mr. Johnson his church, and embarked for England to receive episcopal ordination, where Mr. Johnson's natural curiosity and love of knowledge was gratified, by the attention, conversation.

and friendship of many of the most learned divines of the church of England, with most of whom he maintained a regular correspondence during the rest of his life. After receiving episcopal ordination, Mr. Johnson returned to America, as a missionary, under the patronage of the Venerable Society for the Propagation of the Gospel, and settled at Stratford, Connecticut, of the episcopal congregation of which place he was the regular minister; although, as he was for some time the only clergyman of that denomination in the colony, his labours were necessarily extended over a large tract of adjoining country. Here he married, and gradually overcoming, by the uniform mildness of his manners, the sectarian prejudices which had been excited against him, continued for many years engaged in the active duties of his calling, and in the pursuit of his favourite studies of divinity and the Hebrew language.

In the year 1729, a circumstance occurred, which forms a memorable epoch, not only in the life of Mr. Johnson, but in the literary history of this country; the arrival of the famous Dean, afterwards Bishop Berkeley, in America. A similarity of studies and principles, soon produced an intimate acquaintance between them, and during the two years and a half which that great and amiable* man resided in this country, a constant literary and social intercourse was kept up between them; and an uninterrupted correspondence was afterwards maintained, in a series of the most affectionate and confidential letters, until the death of the bishop, in the year 1752. Dr. Berkeley was then engaged in writing his *Alciphron*, or *the Minute Philosopher*, in which work, as is well known, the whole of the atheistical and deistical controversy against christianity is discussed with great ability and elegance, in the form of a dialogue. The following circumstance, related by the late Dr. Smith, of Philadelphia, may perhaps serve to give greater interest to many parts of the work on this side of the Atlantic: Dr. Johnson, says he, "often visited the dean, while he was in Rhode-Island, who was then writing his Minute Philosopher; and I remember, some months since, when I was at his house in Connecticut, he took up the book, and reading some of the dean's rural descriptions, told me they were, many of them, exactly copied from those charming landscapes that presented themselves to his eye in that delightful island at the time he was writing."* Zealous as Mr. Johnson was for the doctrine and discipline of his own church, yet, so much did his regard for the general interests of religion and learning predominate over every sectarian feeling, that when Dr. Berkeley was about leaving America, he exerted all his influence with the dean, to impress upon his mind, the importance of Yale Cóllege, and the great advantages which might accrue to the colonies from liberal patronage of that institution, although it was exclusively under the control of those from whom he so widely differed in many points of religious opinion. The good seed thus sown, was not lost in the liberal mind of Dr. Berkeley, who, shortly after his return to England, assisted by a few friends whom he had interested in the encouragement of sound learning in this rising empire (as it already appeared to his prophetic eye) sent over a very choice collection of books for the college library, consisting of nearly a thousand volumes of well selected editions of the best authors, which still constitute not the least valuable part of the public library of that highly respectable institution. About the same time, he transmitted to Mr. Johnson, a deed, by which he conveyed to the college his farm in Rhode Island, directing the annual interests to be divided between three bachelors of arts, who, upon examination, should appear to be the best classical scholars of the year, for the purpose of supporting them in the prosecution of their studies, during a residence at college, till they received the degree of master of arts. This donation soon produced the happiest effects; and *the dean's bounty,* as it is still called, has contributed perhaps more than any other cause to keep up in Connecticut a race of sound classical scholars. As the episcopal church increased in Connecticut, the labours of Mr. Johnson, who was regarded as its head and champion, were still augmented; and in a theological controversy which soon followed, he defended her, in several tracts, published at intervals, with ability, candour, and good temper. In 1743, he received, through the recommendation of his friend Bishop (afterwards archbishop) Secker, the degree of doctor in divinity from the university of Oxford, a literary honour which, in that ancient university, has never been by any means lavishly bestowed, and cheap as academic honours have become elsewhere, is still regarded with high respect. Shortly after, for the purpose of counteracting some erroneous notions in morals, which had been propagated with much zeal throughout the country, Dr. Johnson drew up a brief system of morality, containing *the principles of ethics, in a chain of necessary consequences from certain facts,* which was published, in small quarto, in 1746. This was soon followed by a compendium of logic and metaphysics, which, together with the former treatise, falling into the hands of Dr. Franklin, about the time that he was engaged in founding a college in the city of Philadelphia, he considered them so well adapted for the purposes of collegiate instruction, that he reprinted them together, in an octavo volume, in 1752, for the use of the infant seminary. This produced a frequent correspondence between him and Dr. Johnson, whom he often consulted as to the plan of education to be adopted in the college of Philadelphia, and strongly urged him to accept the presidency of it; but this offer Dr. Johnson was, from private reasons, obliged to decline.*

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* "To BERKELEY every virtue under heaven."—POPE.

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* Dr. Smith's preface to the London edition of Dr. Johnson's Moral Philosophy.

The volume which had thus met with the approbation of this able and unprejudiced critic, was shortly after again reprinted in London; and the *third* edition, corrected and enlarged by the author, and introduced with a preface by Dr. Smith (afterwards provost of the university of Pennsylvania) was published in a very handsome form, in 1754. As this is the most considerable performance of our author, it may be fairly taken as a specimen of the general powers of his mind. Although it has long since been superseded as a class book in moral philosophy by the more popular Paley, yet the extensive learning and uniform good sense shown in every page, cannot fail to impress us with a very high respect for its author.

He seems indeed to have had little of the excursive genius of Barrow or Jeremy Taylor, that *largus et exundans ingenii fons*, which makes the whole range of human knowledge and imagination contribute to the illustration or ornament of the subject in hand: but he was perhaps better fitted for the state of society in which he was placed, by a very strong and clear understanding, a most ardent love of truth, and an invincible application and industry in its pursuit. His metaphysics are founded on those of Locke; but he seems often to incline to those conclusions which Berkeley had built upon that foundation. In the ethical part of his works, aware, that while the generality of moralists founded all moral obligation solely on the will of God, some, with Dr. Clarke, considered it as resulting from the truth and nature of things, while others, with Hutcheson, viewed it as arising purely from the suggestions of the *moral sense;* our author appears to consider these three different systems as coinciding in effect, and rather imperfect than erroneous. In brief, he appears to have fallen nearly into the same train of thought which Warburton, much about the same time, on the other side the Atlantic, expressed with his usual strength, and more than his usual elegance; that "God has been pleased to give three different excitements to the practice of virtue; that thus men of all ranks, constitutions, and educations, might find their account in one or other of them; something that would hit their palate, satisfy their reason, or subdue their will. But this admirable provision for the support of virtue, (he adds, in a noble strain of eloquence,) hath been in some measure defeated by its pretended advocates, who have sacrilegiously untwisted this threefold cord, and each carrying off that part he esteemed the strongest, hath affixed that to the throne of God, as the golden chain that is to unite and to draw all to it."*

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* Dr. Franklin, as an additional inducement for Dr. J's removal to Philadelphia, had proposed to get a new church erected for him. Upon Dr. Johnson's expressing some doubts as to the propriety of this measure, Franklin endeavoured to remove the difficulty by some arguments so strongly characteristic of the man, that, as the letter has never been published in any edition of his works, we cannot refrain from extracting a part: "Your tenderness of the church's peace is truly laudable; but, methinks, to build a new church in a growing place, is not properly *dividing*, but *multiplying*, and will really be a means of increasing the number of those who worship God in that way. Many who cannot now be accommodated in the church, go to other places, or stay at home; and if we had another church, many who go to other places, or stay at home, would go to church. I had for several years nailed against the wall of my house, a pigeon-box that would hold six pair, and though they bred as fast as my neighbours' pigeons, I never had more than six pair; the old and strong driving out the young and weak, and obliging them to seek new habitations. At length, I put up an additional box, with apartments for entertaining twelve pair more, and it was soon filled with inhabitants, by the overflowing of my first box, and of others in the neighbourhood. This I take to be a parallel case with the building a new church here."

Much about this period, Dr. Johnson's fondness for the study of Hebrew, led him to the perusal of the writings of Hutchinson, and although he was very far from joining with that author in indiscriminate rejection of the doctrines, and contempt of the great name of NEWTON, yet he was led, after diligent examination, to adopt many of his opinions, both religious and philosophical, in that modified manner in which they have been held by Lord President Forbes,* Parkhurst, and Jones of Nayland. As the literary character of Dr. J. rose in public opinion, his correspondence with the learned of America and England became more extensive, and we find him corresponding with Berkeley, Colden, and Franklin, on science, and with Secker,† Sherlock, Lowth, and Horne, on theology, and the affairs of the church. A part of this interesting correspondence was printed as an appendix to Dr. Chandler's Life of Johnson; (New-York, 1805)—and many other letters have since been published in some of the periodical journals of this city and of Philadelphia. In 1752, a number of gentlemen of New-York, feeling the importance of establishing some system of academic instruction in that rapidly increasing colony; and, perhaps stimulated by the recent success of the Philadelphians, undertook the foundation of a college in this city. In the next year an act of incorporation was obtained, and some provision for a fund for its support was made by a succession of lotteries; and soon after, the trustees unanimously chose Dr. Johnson president of their college. The funds of this institution were increased by the donations of individuals in the colony, and by a liberal grant of land from Trinity Church, including the lot upon which the college edifice now stands, as well as some adjoining ground, from which it still derives the most considerable part of its revenue. Besides this, the college received a benefaction of five hundred pounds sterling from the society in England for the propagation of the gospel; a bequest from a Dr. *Bristowe* of London, a very active member of the same society, of his library, amounting to about fifteen hundred volumes; and finally, a legacy from Mr. Murray* of ten thousand pounds currency, (twenty-five thousand dollars.)

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* Divine Legation, vol. I

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* See his Works, vol. 2. Letter to a Bishop, &c.

† Archbishop Secker always addressed him with the affectionate appellation of "good Dr. Johnson." See the correspondence in *Chandler's Life.*

But after the erection of the college building, and the purchase of a philosophical apparatus, the trustees found it impossible to proceed on the liberal plan which they had begun, without encroaching on the permanent fund, or obtaining some farther assistance. This was supplied by a collection, made in England, for the joint use of the colleges of New-York and Philadelphia, which produced to the former the clear sum of six thousand pounds sterling. The writer of this brief memorial trusts that he is gratifying higher feelings than those of mere antiquarian research, in thus recording the bounty of the first patrons of science in his native state. *His saltem accumulem donis.*

While this liberal spirit was displayed on the part of the public, Dr. Johnson was not inactive, and on June 17th, 1754, he began the collegiate course of instruction alone, with a class of twelve students. He was shortly after assisted by Mr. Cutting, a graduate of the university of Cambridge, who is still remembered as a thorough bred classical scholar; and Mr. Treadwell of Harvard College, Massachusetts, who was appointed professor of mathematics and natural philosophy.† When the institution had thus become regularly organized, the president confined his instructions to Greek, logic, metaphysics and ethics. The course of studies was of necessity adapted to the general state of literature in the country, and therefore not precisely what Dr. Johnson would in theory have formed for himself as a perfect model of academic instruction. The languages were however more thoroughly taught than in any other American college, nor were mathematics and natural philosophy by any means neglected; for the whole tenour of Dr. J.'s studies and writings sufficiently shows that he had little of that disposition, too common among modern scholars, to sacrifice the interests of physical science to the elegancies of polite literature; and had he lived in the present advanced state of chemical knowledge, he would doubtless have seen with regret, the professor of chemistry, in his college, expelled from the faculty of arts, to make room for a more critical study of the niceties of Greek prosody.* In the midst of all his academic labours, Dr. Johnson never lost sight of the higher duties of his profession; and he from time to time combated such errors as he deemed of peculiarly dangerous tendency in this country, in some tracts and single sermons, published about the year 1761. After filling this station, for which he was so eminently qualified, about nine years, finding his activity gradually impaired by age and infirmity, and his spirits sinking under domestic calamity, in the loss of his son and wife; seeing, too, the college thoroughly established, and flourishing beyond his hopes, under the immediate superintendence of Dr. Myles Cooper, the professor of moral philosophy, and his destined successor, a man of acknowledged learning and talents, he was induced, in 1763, to resign his office, and retire to Stratford, to finish the remainder of his days in the bosom of his family.

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* Mr. Murray was a lawyer of great eminence in this city, about the middle of the last century. He was one of the council, and attorney general of the province, and much celebrated in his day as a great constitutional lawyer.

† Mr. Treadwell died in 1760, and was succeeded, as professor of mathematics, by Mr. Robert Harper, a gentleman educated at the university of Glasgow.

In this peaceful retreat, he again resumed the duties of a parish priest, and pursued his studies, and discharged his clerical functions, at the age of seventy, with the same zeal with which he had applied himself to them more than forty years before. While engaged in the education of his grandchildren, he was led to draw up a concise English grammar, which he published in 1765, a work of the more importance at that time, as Dr. Lowth's had not yet been published in England.

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* See the course of study in Columbia College, as published by the board of trustees.

Being desirous to promote the study of the original scriptures in the colonies, and struck with some real or imaginary resemblance in the grammatical structure of the Hebrew and English, he drew up a Hebrew grammar, in which the rudiments of that language are compared, and taught together with the English. This was printed in London, in 1767, and a second edition, much enlarged and amended, in 1771. Thus occupied in works of piety and usefulness, his virtuous and venerable age glided peacefully along, until the 6th of January, 1772, when, after a very short and apparently slight indisposition, he expired, in his chair, without a struggle or a groan. His remains are interred in the episcopal burying ground at Stratford, where a neat monument is erected, with the following inscription, from the classic pen of President Cooper.

M. S.
SAMUELIS JOHNSON, D. D.
Collegii Regalis, Novi Eboraci,
Præsidis primi,
Et hujus Ecclesiæ, nuper Rectoris.
Natus die, 14to Octob. 1696.
Obiit 6to Jan. 1772.

If decent dignity and modest mien,
The cheerful heart, and countenance serene;
If pure religion and unsullied truth,
His age's solace, and his search in youth;
If charity, through all the race he ran,
Still wishing well, and doing good to man;

If learning, free from pedantry and pride;
If faith and virtue, walking side by side;
If well to mark his being's aim and end,
To shine through life, the husband, father, friend;
If *these* ambition in thy soul can raise,
Excite thy reverence, or demand thy praise,
Reader, ere yet thou quit this earthly scene,
Revere his name, and be what *he* has been.

Dr. Johnson had two sons, WILLIAM JOHNSON, a gentleman of great and early promise, who devoted himself to the service of the church, but fell a victim to the small-pox, in the prime of his life, in 1756; and *William Samuel*, born in 1727, who, fixing upon the law as his profession, soon arrived at the highest honours of the bar in his native province. After passing, before the revolution, through many important civil stations in the colony of Connecticut, he was afterwards successively appointed delegate in congress, under the old confederation, a member of the convention which framed the present constitution of the United States, and, together with Oliver Elsworth, the first senator in congress from the state of Connecticut. He finally accepted the appointment of president of Columbia College, which, after holding for a number of years, he resigned in 1800, and retired to his native village of Stratford, where he still resides.

The life of Dr. Samuel Johnson, by his friend and pupil, the late Dr. Chandler, from which most of the facts of the above narrative have been drawn, was published in this city in 1805. Dr. Chandler appears to have been a man of great activity of mind and ardour of application; but his powers were exerted chiefly in controversies, which, however important at the time, are now considered as only of local and temporary interest; the political circumstances of the times exposed him to odium, and even persecution, and his declining age was embittered with a lingering and painful disease, which he sustained with matchless fortitude and resignation. Now, however, that the *fitful fever* of political and theological discord has gone past, it is due, as well to the reputation of that church, of which he was the ornament and the champion, as to the general literary character of the country, that the memory of such a man should not be suffered to moulder in oblivion. What is still known of the more eminent of the last generation of native American scholars, more especially of those of them who, like Dr. Chandler, were conspicuous, as well for moral as for intellectual excellence, should be preserved before it be too late. To borrow the language of a modern Latinist, "interesse enim reipublicæ existimo ut exemplatarium viborum literis mandentur; ut ad aliorum, sive imitationem, sive admonitionem, sive opprobrium proponantur."

II.

AN ACCOUNT *of a* MALIGNANT EPIDEMIC, *which prevailed in the county of West-Chester, N. Y. in the summer of* 1812. *Communicated to Dr.* DAVID HOSACK *by Dr.* MATSON SMITH *of New-Rochelle.*

New-Rochelle, August 17th, 1812.

Dear Sir,

BEING persuaded that much benefit may be derived from a knowledge of indigenous epidemics, and having a wish to contribute my mite toward the dissemination of such knowledge, I with cheerfulness devote a little time in relating to you, agreeably to your request, those phenomena that appeared to mark the nature of the disease which prevailed in this district of country a few months since.

So early as about mid-winter, a considerable number of cases appeared in the north-eastern part of this county; and, indeed, from the best information I could obtain, it appeared to have gradually progressed from the state of Vermont until it extended to this place.

The accounts given me of its character, before I had an opportunity of seeing a case, declared it to be insidious in its approach, malignant in its nature, and fatal in its consequences; insomuch, that the most judicious practitioners were in general disconcerted in their attempts to obviate its mortal tendency.

These circumstances incited in me a particular watchfulness over every case to which I was called; but not until the 28th March did I witness a case, in which were present the pathognomonic symptoms of the disease. From this time, the disease became more common, and the trite observation of authors, that epidemics assimilate all diseases to their own nature, was particularly appropriate.

In denominating this disease, I have no hesitation in pronouncing it the peripneumonia notha of Huxham, although occasional anomalous symptoms would render doubtful the exact propriety of the term. An accurate delineation of this disease has been traced by Dr. Hugh Williamson, in his account of an epidemic which prevailed in North-Carolina some years since, published in the second volume of the Medical Repository. In the first volume of the Medical and Philosophical Register, may be seen, the history of a malignant pleurisy, by Dr. Bard, which prevailed at Huntington, on Long Island, in the year 1749, which is also a tolerably accurate description of the disease which is the subject of the following observations.

No particular class of persons appeared to be the subjects of the disease; all ages were equally liable to its attack. In children, and some cases of adults, it bore a strong resemblance to croup. Persons of temperate and intemperate habits suffered indiscriminately; but it may be especially remarked that those persons who laboured under the disease, that had long indulged in habits of ebriety, generally fell victims to its violence. The attack usually was sudden; the premonitory symptoms being chillness, lassitude, and pain, more or less acute, in some part of the chest, head, or extremities. When the head was primarily affected with pain, the patient soon became delirious, and disposed to stupor; and as long as these symptoms continued violent, there was no pain of the chest; or if any, it was inconsiderable; but when the pain of the head or extremities abated, the chest became affected. This was observed in a great number of cases, and it was noticed, where the lungs were secondarily affected, that is, where the pain was translated to the chest from another part, its acuteness was greatly diminished, but the consequences not less dangerous. To these symptoms followed a cough, which oftentimes exceedingly harassed the patient; and to this succeeded an expectoration of mucus, intimately blended with blood. In this particular, however, there was much variety, the matter expectorated being sometimes simple mucus, at others, unmixed florid blood, constituting a perfect hæmoptysis. It was not uncommon for patients, immediately after their attack, to complain of excessive prostration of strength, while, at the same time, they were able to walk their room with apparent ease. In the generality of cases, respiration was not very laborious, particularly in those, where some other part than the chest was originally affected. In some cases, however, such was the oppression and pain about the chest, as to excite a distressing and powerful exertion to inspire, and to induce the patient to elevate the shoulders to increase the capacity of the chest, and throw the head back in order to straiten the passage of the air to the lungs.

In the forming stage of the disease, the eyes were inflamed, and the face pallid; but as the disease advanced, the countenance became flushed, and, indeed, soon acquired an extraordinary livid redness, which frequently exhibited a spotted appearance. This discoloration of the countenance was an invariably attendant symptom, and one of the most prominent characteristics of the disease; and though this redness of the skin, but in a slighter degree, extended over the whole surface of the system, yet it is remarkable, that at no time was the heat much above the natural, but generally below the healthy, standard; besides, such was the sensibility to cold, that patients often complained on the slightest exposure by raising the bed clothes. The tongue was covered with a thin coat of fur, of a whitish brown colour, which grew more dark as the disease advanced, though it often became clear, and of a bright red colour, but seldom dry.

In persons in which much plethora existed, the pulse, on the accession of the disease, was full, and slightly tense. Its tensity, however, in this state of the system, was by no means common, it being more frequently full and soft. An irregularity and intermission of the pulse prevailed in most cases, if not on the first, pretty uniformly after the second or third day from the attack, especially, if the oppression at the breast was great. In point of frequency, it may be declared, that, in the first stage of the disease, it was seldom much accelerated, but as the disorder progressed, became frequently reduced below sixty. In constitutions of a weak or nervous temperament, no tensity was discovered, nor was the fullness so considerable, though this, with a preternatural softness, stood paramount among the diagnostic symptoms. Difficult deglutition was a frequent occurrence; in one case, such was the incapacity of this function, that, before the end of the first twenty-four hours, nothing could be taken into the stomach; in this state the patient died. On examining the throat, in those cases in which this symptom appeared, no tumefaction or inflammation could be discovered; this circumstance induced me to ascribe it to spasm. In a few cases, by the second or fourth day, petechiæ, of a red colour, which soon changed to a purple, appeared on the body and extremities.

No particular symptom or symptoms were thought to be critical; but the violence of the disease began gradually to abate, or terminated fatally, by the fifth day, or between that and the ninth. In the last and mortal stage, the extremities became cold, the pulse sunk so as to be imperceptible, a profuse cold sweat pervaded the body, especially the head and breast, and bronchial effusion, completed the fatal event.

In the treatment of this disease, the utmost circumspection was to be observed, particularly in regard to blood-letting, which, if had recourse to indiscriminately, seldom failed to produce pernicious consequences. Where I found the pulse full, and sufficiently tense to warrant the use of the lancet, it was my practice to employ it, and, I believe, often with manifest advantage; but such was the typhoid tendency and debility induced by the first venesection, that a second was never thought safe. Under no other circumstances did I think myself justified in bleeding, though the pulmonic symptoms often strongly urged the necessity of that remedy. The appearances of the blood, when drawn, were various, being, in many cases, evidently occasioned by the circumstances of blood-letting. One circumstance may be mentioned, as it was uniformly noticed; on standing at rest, it did not so readily coagulate as in ordinary cases.

In alleviating the pneumonic pain and oppression, blisters were highly serviceable; these, applied to the chest, were large and repeated, and a discharge kept up from them. In the latter stages also, blisters, applied in succession to the extremities, were found to produce the happiest effects. Purgative medicines were early prescribed, and the evacuation produced by their operation, was usually of a dark colour, often approximating to black, and, in fact, this complexion of the stools was observed in every stage of the disease, but without any extraordinary fetor. A diarrhœa frequently supervened, accompanied with a discharge of blood from the bowels, which tended greatly to reduce the strength of the patient; this symptom was most certainly relieved by the use of injections of starch, with tincture of opium. Sudorifics, if adapted to the circumstances of the patient, were highly beneficial in the two or three first days of the disorder. Much caution, however, in this part of the treatment, was necessary, inasmuch, as many were disposed to profuse morbid sweats, which were extremely debilitating, and to prevent, or check which, demanded the employment of every means. In accomplishing this end, nothing was found so effectual as washing the body with warm brandy and water, or clear brandy or spirits; expectorants were also employed. Among this class of medicines, a decided preference was given to the rad. seneka. Much dependence was placed on calomel, which was given in order to excite ptyalism. In effecting this, great difficulty was often experienced, and, in some instances, such was the inactivity of the absorbents, as rendered it impossible; but in no case, where a salivation was produced, did the disease end fatally. In directing the use of the various stimuli, I was influenced by the state of the pulse, and the temperature of the skin; if, in the first, there was want of action; or, in the latter, a diminution of heat, they were esteemed necessary; under no other circumstances did I think them indicated. These, in general, were the leading remedies in my method of treatment, and which, I have the pleasure to state, were in common successful.

Thus, sir, have I given you a concise view of the disease, as it appeared in my circle of practice, and which continued to prevail through the months of April, May, and June; in the latter month, however, the number of cases was comparatively few, and the last which I saw was in the early part of July.

During the prevalence of this disease, the changes of weather were considerable, especially in the temperature of the air; the quantity of rain was unusually great, and the wind generally blew from the north and north east quarter. As a concluding remark, I would observe, that at no time did I account the disease contagious.

I am, Sir, your friend and humble servant,

MATSON SMITH.

Dr. David Hosack.

II.

OBSERVATIONS *on the Generation and Introduction of* CONTAGION *by Ships. In a letter to Dr.* DAVID HOSACK, *from Col.* J. WILLIAMS, *President of the United States Military Philosophical Society, &c.*

WITHOUT engaging in the controversy relative to the importation of the yellow fever, or its generation, in a foul atmosphere, in any country, I may be permitted to state some facts, and to draw such conclusions as these facts will evidently justify, on the peculiar facility of the importation in sea vessels.

A sea vessel must be made *water*-tight, or it could not float on the sea; it must be closed above as well as below, or it would be liable to be filled by the sea washing over it in a storm; and the cargo must be compactly stowed, or it would change its position, by the tossing or rolling of the ship, and endanger its very existence. From these considerations, it is self-evident, that a ship must be *air*-tight as well as *water*-tight, and a portion of that atmosphere, whether pure or foul, in which the cargo was taken in, would be transported with it to the place where the cargo may be unloaded, with this single difference, that if pure, it might, by its confinement, become foul, but if noxious, it might, from that cause, become more offensive, but could never become pure.

To illustrate this statement, and to take a more comprehensive view of the subject, let us examine the construction, use, and general situation of a ship and its cargo, during a voyage to and from any place within the tropical regions.

Of the Construction of a Ship.

The hull (the only part necessary to be examined in this inquiry) is composed of timber and plank. The frame may be called its skeleton, and the plank its external skin; this description applies to its deck, as well as to its bottom and sides, all being water-tight, and, except by the apertures of the hatchway and forecastle, which are both covered with tarpaulins, and battered down when at sea, neither air nor water can enter or escape; some, indeed, may force its way through the crevices of the bulk head, when the lower deck is not flush fore and aft, and some gets through the store room, on the occasional opening of the after scuttle, to the great annoyance of the passengers and people in the cabin and steerage. The ribs of this skeleton are of a certain thickness, and are at a certain distance from each other, so that, between the ceiling (that is, an inside skin of plank nailed on these ribs) and the bottom, there are spaces, the cubical contents of which are equal to the square of these spaces multiplied into the thickness of the ribs.

These form receptacles for all the foul air, especially that which is more ponderous than the external air, and, by its coolness, (being below, and consequently of the temperature of the water) even the same kind of air would be more heavy than the circumambient atmosphere, which, in the West-Indies, is generally from eighty-five to ninety-five degrees. But as it is not necessary that the ceiling of a ship should be light like its bottom, whatever filth there may be in a liquid state, within the ship, must filtrate through the seams of the ceiling, which are always open down to the limbers on each side of the keelson. There are in all ships, holes or notches cut in the floor timbers, close to the bottom, in order to permit what water may be in a ship to run into the well-room, where the pumps are placed; but whatever will not filtrate through these passages must remain in the limbers, and, accordingly, whenever a ship is discharged, a plank of the ceiling on each side of the keelson (which is generally left loose for the purpose) is taken up, and the limbers are cleared of all the filth collected during the voyage.

Every man who has been at sea in a tight ship, has been sensible of the stench of the bilge-water, or the accumulated filth in its liquid form, as soon as she quits the port, owing to its agitation by the ship's motion; and every captain of a ship knows, that the colour of the paint in his cabin becomes changed, precisely as the colour of the paint in necessaries on shore is well known to be discoloured by foul exhalations. This is so well understood among seamen, that, to designate a tight ship, they always say, "*she does not make water enough to keep herself sweet*;" and, in many instances, they have a plug in the run abaft, and below the water line, purposely to let in sea water to mix with the foul water within, and raise it high enough to be pumped out. The pumps, it will be remembered, cannot take up all the water, for there must be a hole at the side of each of them to let the water enter, and, the moment the water is below the superior part of the hole, the air will rush in, and the pump will suck; besides, owing to the position of a ship under a press of sail, or by pitching and rolling in a sea, a great part of the water between the ceiling and bottom does not get to the pump.

Of the Cargo of a Ship.

Our inquiry confines us to the produce of the West-Indies, and of other tropical countries, such as sugar, molasses, cotton, coffee, cocoa, and fruits in general. Rum is sometimes imported, but, since the almost universal use of brandy, this now makes an inconsiderable part; what is usually mixed with other parts of a cargo would not correct the effluvia, but only serve to render them somewhat more volatile.

In loading a ship, the heaviest articles are put lowest, for obvious reasons, that relate to the navigation of a ship. The sugar and molasses then, go into the bottom; the coffee and cocoa go into the wings and the interstices among the casks, and the cotton is stowed above all. Here then, it is evident, that the kernels that may drop from the bags, and the filtrations or leaks from the sugar and molasses, will all find their way to the limbers, and there, in the temperature of at least eighty degrees, go into a state of fermentation; while the air, generated by that fermentation, will ascend, and be as much as possible imbibed and retained by the cotton. In proportion as air is generated, the whole will become compressed, and give a great velocity to that which might be forced through crevices, &c. Add to this, the issues from the barrels of provisions, from the casks of water, grown foul by long keeping in stagnant air, of waste of every kind made by the sailors between deck, in short, every thing of a filthy kind will find its way to the bottom, and add to the general fermentable mass, always keeping the hold full of compressed foul air. Even the cleanliness of the cabin accumulates the filth below, by washing every thing down into it.

This description of a ship and her cargo is purposely made, with strict attention to the naked facts, and all the effect of negligence, and want of judgment, which many circumstances would justify much reliance upon, in support of the conclusion, are omitted, because the argument is not intended to rest upon accidental or extraneous particulars. The statement evidently shows, that if the germ of the yellow fever be thus *boxed-up* in the West-Indies, it will remain in the best possible hot-bed, till it be brought to sprout in the neighbourhood of our wharves.

Much has been said about the filth of our docks and slips, but these are covered with water, in the motion of rapid tides, at both flood and ebb, and, at the worst, are exposed to the constant action of an active atmosphere; while, on the contrary, a ship has, for several weeks, the noxious vapour carefully kept in vessels, almost hermetically sealed, without the least chance of dissipation. Let a large diving-bell be placed upon the bottom of a very filthy dock, for the whole time that a ship is coming from the West-Indies, and then we might admit of a comparison between the noxious vapour contained under one and within the other. Or to make a more appropriate, and, perhaps, a more accurate comparison, let one of our mud-machines, said to have been so productive of deleterious air at Brooklyn, be covered with an air-tight deck, and kept four weeks in a temperature never less than eighty degrees, and then, on a sudden, be opened, and the air let loose in a populous neighbourhood, by no means remarkable for its cleanliness, and some affinity between the cases might be claimed; but even then, the quiet residence in a calm dock would bear no proportion to the agitation of a tempestuous sea.

Every man of any chemical knowledge will admit, that air, as well as other fluids might, in a calm state, exist in strata, according to their density, just as we might make different strata of water, spirits, alcohol, and ether, yet, all being colourless, the bottle would present to the eye a homogenous appearance; so, of air, where the densities differ in the proportion of one to fifteen, perhaps more, without being distinguishable by sight, a perfectly quiescent state would render the comparison much in favour of the mud-machine. Agitation is very favourable to fermentation, and the intermixture of all the air, generated by the fermentation of various substances, is sure to affect the whole mass with the deleterious quality.

But there is another point of comparison which is not inapplicable to the subject: our climate is the most changeable in the whole world; the different seasons show a range of thermometrical graduation of more than one hundred degrees; and even in the same season, often in the same day, the variations are very great, while in any case, either of heat or cold, the same temperature seldom lasts three days. We have frequently seen a fall of snow and summer heat within the space of a few hours.

In the West-Indies, on the contrary, there is a perpetual summer heat, scarcely agitated by the gentle sea and land breezes which, like the flux and reflux of the tide, carry off and bring back the noxious particles contained in it alternately. It is only in the hurricane months that nature restores salubrity by violent atmospherical agitation; this is the season of health; and this is precisely the period when, in the course of commercial arrangements, American vessels are not there.

The foregoing remarks apply generally to the construction of a ship, the nature of its cargo, and the occurrences relative to both in the course of a voyage. But it may not be improper to add a few particulars relative to the passengers and people during the same period. We are very sensible on shore of the importance of personal cleanliness; and this is aided by the conveniences of frequent washing, the means for which, even the most indigent, have always at command.

At sea, only salt water can be used for this purpose, owing to the limited quantity and important use of fresh water on ship board. It is often prohibited even to wash the hands and face in fresh water; and it is never allowed for washing of cloathing of any kind. Soap is not miscible with salt water, and is of no use whatever. Of late, indeed, it has been discovered that fuller's earth, mixed with salt water, will render it apparently softer, and it is thence imagined that it answers the purpose of soap. This, in some degree, may be true, since the earth may take up a part of the oleaginous substances, with which foul linen, &c. is usually impregnated. But clothing washed in salt water, will never become perfectly dry in a moist atmosphere, owing to the salt water which is always retained, and which is perpetually imbibing moisture. For these reasons there is but little washing done among the crew, and none among the passengers. Now let us imagine a case to happen in a house at the sea side, in a warm climate. Suppose that there were but two apartments in this house, just as large as the cabin and steerage of a ship; that the bedsteads were fixed to the walls like cabins, and that, like the cobler's stall, they answered the purpose of every usually inhabited apartment. We allow a beach as large as a ship's deck, and the cooking to be done in the open air; but there must be no pump, and only salt water can be used, except for cooking and drinking. What would be the situation of such a family at the end of one month? Would there not be reasonable apprehension that a gaol fever would be generated there? And let me ask, if among our most indigent citizens, who inhabit such places as the yellow fever has appeared in, any house has been found in the situation described. Yet any man who has been a few weeks at sea, will recognize the fidelity of the representation, as it relates to a sea vessel, and who has ever boarded a ship at the instant of her arrival, without feeling an impression of disgust? Yet all good captains take care to make the ship herself as clean as possible, just before they expect to arrive. When in port, the passengers land their baggage, and give out their foul cloathing, and the crew also open their chests to have a general washing; and all the confined effluvium, like that of Pandora's box, is immediately scattered in every direction.

A celebrated French writer on the customs, manners, and general habits in Turkey, (Baron de Tott) in speaking of the plagues, has this remarkable passage: "La cause qui la propage et le foyer qui la conserve, se trouvent l'une et l'autre, chez les marchands frippiers à Constantinople." So that, according to this author, if the sale of old clothes were prohibited in that city, that terrible scourge might be arrested in its awful and deadly progress. The application of this remark is too evident to need further observation.

Nothing in this description is intended to apply to ships arriving from more northern countries, nor to ships of war. The writer has, in many instances, witnessed the active cleanliness of large ships to and from Europe, and along our own coast; and he has, with great satisfaction, observed the efficacious use of wind sails in this and other harbours. But the necessity of these judicious preventives, under such favourable circumstances, serve more strongly to enforce all the foregoing observations, when applied to such small, confined, and generally unhealthy vessels as are usually employed in the West-India trade, and the infectious kind of cargoes imported in them.

IV.

AN ESSAY *on the* MALIGNANT EPIDEMIC PERIPNEUMONY, *which prevailed at Newtown, Long-Island, in the Spring of* 1812—*By* VALENTINE MOTT, M. D. *Professor of Surgery in Columbia College, Corresponding Member of the Medical Society of London, &c. in a letter to* J. C. LETTSOM, M. D. &c. *London.—Communicated to the Editors of the Register.*

THE occurrence of epidemics ought to be carefully and faithfully recorded, for the instruction of posterity. Every age presents to us more or less of novelty, in the commencement, progress, and termination of pestilential diseases; we need only refer to the historic page for a satisfactory illustration of this position. The history of the prevalence of epidemical diseases, would form a very interesting subject of inquiry. It is a theme, rich in matter, both curious and interesting, and very considerably instructive and important; and it is by the industry and diligence of our worthy and venerable predecessors, that so many invaluable legacies have been bequeathed to posterity; which will long continue as land marks, or beacons, to direct the medical traveller.

Every attempt, therefore, however feeble and imperfectly performed, will be considered as praise worthy, if not substantially and practically useful. With this impression, I shall venture to give somewhat minutely, an account of a very malignant and fatal form of disease, which prevailed at Newtown, on Long-Island, in the spring of 1812, and which, from its character, I would call a Malignant Epidemic Peripneumony.

The weather, during the prevalence of this epidemic, was very remarkable for a great quantity of rain, and the easterly and north-easterly winds. For the space of more than a week, frequently at a time, the wind would be from the west in the morning, with a clear atmosphere, and by mid-day, from an easterly quarter; and if not attended with rain, the atmosphere would be loaded with a mistiness, accompanied with an unusual degree of chilliness. This peculiarity in the season, did not fail to arrest the attention of the most careless and common observer. As late as the first of fifth month, (May) but very little appearance of vegetation was observable, even in the warmest and most favourable situations; and on the third and fourth of the month, a rain and snow storm, occurred from the north-east, which was more than commonly severe and cold. After this kind of stormy weather, a great increase in the number of new cases was generally observed. The whole month was uncommonly cold and unpleasant; insomuch that the common fruit trees of the season were not fully blown till the beginning of sixth month, (June) which is unparalleled in the memory of the oldest inhabitants among us.

This disease attacked all ages and constitutions, and was mostly confined to those districts, which were inhabited by the lower and more indigent classes: exceptions to this, however, now and then occurred. It was ushered in, in all cases by a very severe chill, which lasted for some time; this was followed by a great degree of heat, pain in the back, limbs and head, and most intense pain in the chest; great difficulty of breathing, and in some instances the oppression was so great as to threaten immediate suffocation, with violent cough, and expectoration of yellow matter, and generally very bloody. The secretion from the lungs, when not bloody, was so yellow as to stain linen on which it was received. The expectoration of blood was much greater than had usually been observed to take place in any peripneumonic affection. The pulse generally was small and frequent, and by no means tense; skin hot and dry; tongue white and moist; bowels more or less relaxed, with nausea, and in many instances violent and repeated vomitings, attended from the commencement of the chill.

In some instances a profuse diarrhœa attended from the first attack, so as to exhaust the patient very much, accompanied with a most distressing nausea. In these cases, much less affection of the chest was observed; still, however, sufficient to claim particular attention, accompanied with the yellow expectoration, and even blood.

After the lapse of one or two days, great prostration of strength would take place, without a comparative abatement in the oppression and distress at the breast; which continued, though in a lesser degree, accompanied with an augmentation of the pain in the head, heat of the skin, and other symptoms of ardent fever. At this time, frequently a considerable yellowness would be manifest in the eyes and face, and generally over the body; in some cases to as great a degree as was ever observed in the autumnal bilious remittent, or yellow fever of our cities. This bilious discolouration lasted through the whole course of the disease, and even during the convalescent state, which was generally very protracted and tedious.

It was very natural, when called to a patient labouring under the symptoms which have been enumerated, to deplete the sanguiferous system by bleeding, and that not very sparingly; especially in those cases where the peripneumonic affection was the greatest. Not only the symptoms would seem to warrant such practice; but the blood too, when drawn, exhibited the sizy appearance, and buffy coat, though less viscid than common. But the effect of the bleeding upon the patient was not such as to warrant a repetition of the operation: once was enough, and in some, it is feared, more than enough, even when only three or four ounces were taken. It is a fact, not a little remarkable, that even so small an evacuation from the blood-vessels, as last mentioned, would induce the most astonishing prostration, with small and feeble pulse, &c. convincing the physician, before he left the chamber, of his error; though the evacuation seldom failed to give temporary relief to the distressing affection of the chest.

The state of the stomach and bowels was such as generally to forbid the use of evacuants, except of the mild or laxative kind; for even these, in some instances, would be followed by delirium, if they operated at all freely. However much I may be attached to the Hamiltonian plan of free evacuation from the alimentary canal, and from what I have seen in the practice of this learned gentleman, most certainly am; yet, in this disease, it ought to be used with the greatest care and circumspection.

As the most urgent affection seemed to be that of the chest, no time was to be lost in attempting to relieve it; and for this purpose a large blister should be applied, and one sufficiently large to cover all the fore part of the thorax. This must be several times repeated; and it is better to reapply it, than to promote a discharge from the first; and each plaster will be found to give great relief: indeed they appear almost the only remedies to relieve the thoracic distress before mentioned. To aid the plasters, we must now endeavour to excite a free discharge from the skin by perspiration. This is one of the most important indications in the treatment of this disease. To effect this object, in the fullest and most speedy manner, not only warm teas must be exhibited, but the external application of warm and relaxing means, must be resorted to. For internal use, a strong decoction of seneka and aq. ammon. acetat. as much as the stomach would bear; or small quantities of opium, ipecac. and camphor, and frequently repeated; together with the external application of the steam of warm bricks, wet with vinegar, and wrapped in flannel; or bottles of warm water, placed close to the patient in bed, and the warm bath,* were found the best calculated to produce this effect. When sweating is once excited, it ought to be kept up from twenty-four to forty-eight hours, without intermission; as the relief afforded to all the symptoms, never failed to justify the practice.

The exhaustion of the powers of life was so great in some instances, in a short time from the first attack, as was shown by a coldness of the extremities, weak and small pulse, and coma, that no time was to be lost in throwing in stimulating and cordial medicines; as toddy and wine whey, even though they might appear to be contra-indicated by the affection of the chest. If epispastics were previously applied, the pectoral affection never appeared to be aggravated by it; but, on the contrary, was relieved as soon as a general warmth was restored, and especially if accompanied with sweating. When the diarrhœa was profuse, the addition of a little tinct. opii to the decoction of seneka and aq. am. acetat. or the exhibition of a little solid opium, would generally keep it within proper limits.

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* The sage Hippocrates, when speaking of the warm bath in his book on acute diseases, has the following words: "Convenit autem in totum magis peripneumoniis, quam febribus ardentibus. Nam dolorem lateris et pectoris at dorsi, balneum lenit, et sputum maturum facit, ac educit; et facilem spirationem reddit, et lassitudinem eximit, articulos enim et cutis superficiem mollit."

Hippoc. lib. de vic. rat. in morb. acut. Tom. I. p. 226.

As soon as the affection of the chest was removed by the means above mentioned, cordial and stomachic remedies were loudly called for; such as wine whey, infusion of camomile flowers, or decoction of quassia, which latter appeared to answer the best. The relief of this affection was accompanied with a corresponding abatement of all the other symptoms; the tongue became moist and clean; in fact, the patient would appear to be convalescent. The cough would now be troublesome, with the yellow expectoration, but not bloody; the whole body would be sometimes as yellow as an orange; and it was at this time the patient required the most careful nursing, owing to the most remarkable exhaustion of the powers of life. The cough was relieved by the tinct. opii camph. and decoct. senekæ, or the mistura sperm. ceti; but it continued to annoy during the convalescent state, which was as before observed, commonly lingering.

Its duration was very various. In some instances it proved fatal in the course of eight-and-forty hours, three and five days, and in some cases as late as the second and third week. In the protracted cases, death was always preceded by typhoid symptoms, accompanied with an urgent cough and expectoration. But in those that terminated the most suddenly, there were no typhoid appearances. May not death, in these instances, be occasioned by gangrene of the lungs, as has been observed by some of the older authors?* It observed the ancient law of epidemics, of being more severe and fatal in its commencement, than at its termination. The average mortality was about one third, and one in four that were attacked.

This disease continued to be very rife and fatal, till the beginning of sixth month, (June) when a number of cases occurred, in which there was but little difficulty and pain on breathing, and but little cough. In these cases, violent delirium attended from the commencement, with ardent fever, with scarcely the slightest remission for three or four days. In these instances the sickness at the stomach and diarrhœa were considerable, and the prostration that followed very great. They all yielded to the use of blisters, and the general sudorific plan that we have already laid down, without any typhoid state supervening.

The disease which has now been described, was not confined to the township of Newtown, but took a very extensive range through our state. It was prevalent in many places on the north side of Long-Island; mostly confined, however, to that tract of country which extends from Newtown to the town of Huntington. In the counties of East and West Chester, it has likewise prevailed; but Dutchess County, more than any other part of the state, will long recollect its dreadful and fatal ravages. The inhabitants of our own city, while they deeply sympathized in the distress and calamity upon their borders, were not free from consternation and dismay at home.†

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* See Van Swieten's Commentaries, vol. 8. p. 261. Also, McBride's Practice of Physic.

† ——Terruit urbem;
Terruit gentes,——. Hor. Carm. II.

As there is a great diversity of opinion, even among medical gentlemen, who have been conversant with the spotted fever, it will not, I hope, be deemed impertinent to subjoin, that I believe in the identity of the late disease in different parts of the state. I venture to do it, however, as it is predicted upon information that cannot be questioned: it is not from supposition or conjecture. The disease was prevailing through a great tract of country at the same season of the year, though no doubt in a slight degree differing from some peculiar local and individual circumstances, yet it was essentially and virtually the same epidemic. Huxham informs us, that he has known a catarrhal epidemic fever, in very cold and mountainous situations, to assume the nature of pleuro-peripneumony; whereas in very low situations the same has run into a slow nervous fever. The same popular disease therefore, reigning in different places, may require a very different mode of treatment.

We surely cannot denominate the disease which we have described, a pure or simple fever; or, as many have called it, spotted fever! If we look into Dr. North's book, on the malignant epidemic, which is called spotted fever, and which he has described with great accuracy and care, no one will hesitate to say, that the present epidemic is a very different disease. Dr. North has been at more pains than any of his cotemporaries, in collecting and embodying a stock of important information, relative to this very extraordinary and novel disease. The annals of our country will have to record this new hydra, or monster, to be enrolled on the endless catalogue of human maladies. After contrasting it with the plague, scarlatina, cynanche maligna, &c. he is of opinion, that each has its peculiar shades and complexions, though they belong to the same family of diseases; and that the spotted fever is a new species of Typhus. In giving a nosological character, he says, "I think it ought not to be arranged under the order phlegmasia, for the following reason: although in some few cases local inflammation has been induced by the disease; yet this has not oftener happened in this epidemic, than in other malignant fevers. Whether it more properly belongs to the order febres, or exanthemata, is not so clear."

Dr. Arnell states, that they did not bear bleeding, and the blood showed no buffy appearance. In enumerating the symptoms of the disease, no mention is made of any peripneumonic affection, as pain and difficulty in breathing, or cough, nor bloody expectoration; it attacked all ages, and proved fatal to six in seven who were affected; in some, as early as fifteen hours from the first attack, and from one to three days. Petechiæ appeared all over the body, and of a large size in many instances.*

Dr. Strong, in his Inaugural Dissertation on the spotted fever, as it appeared in the town of Medfield, Massachusetts, in the spring of 1806, and in Hartford and Windsor, in 1807, has taken great pains to describe the disease, having had many opportunities of observing it. From his essay, it appears, that the inhabitants of high and low situations are equally subject to it; and though there is some variety in the commencement, the leading symptoms are well marked.—"Wherever it appears," says he, "in whatever manner it makes its approach, that debility, which is more to be dreaded than a strong man armed, is the most striking characteristic." In another place, he says, the most distressing symptom, and one the most to be dreaded, is a peculiar sensation about the upper orifice of the stomach, which patients call "a deadly feeling, a death like coldness or faintness."

In the Massachusetts Medical Papers, may be found a very detailed and minute account of the spotted fever, as it prevailed in different parts of the eastern states. The zeal and interest which the members of the Medical Society of Massachusetts have manifested in their investigations into the nature of this extraordinary and novel disease, will be a lasting memorial of their philanthropy and benevolence. In detailing the symptoms of this disease, they say, " The respiration is much and variously affected; in general it is difficult. Cough rarely occurs, and the difficulty of respiration has not commonly appeared to rise from an inflammation of the lungs."*

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* See Dr. Arnell's account of the spotted fever, as it appeared in Orange County, in 1808-9, in the 1st vol. of the Medical and Philosophical Register.

The cause, whatever it may be, which produces this new form of fever, must have a powerful and deadly operation upon the energies of the nervous system; more extraordinary than even the pestilence of the Levant. There is no example in the whole of medical records, as far as I know, of a morbid poison producing such sudden death, as we are told takes place in this disease.† The sudden and unexampled prostration of strength, together with the great subduction of animal heat, constitutes a very important and prominent feature in this new epidemic; insomuch, that Dr. North says, " most physicians who have had experience in it, consider their patients relieved from a most deplorable state, as soon as they get the surface of the body warm, by any remedies which may be in their power." The conclusion, we therefore think unavoidably follows, that this is altogether a new form of disease in the land;‡ and as Dr. North very properly says, may be considered a new species of typhus. No form of typhus which we have heretofore had described by the celebrated Dr. Cullen, the Febris Nova of Sydenham, or the Lenta Febris of the great Roman physician Celsus, can be compared to this new monster.

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* Vide Massachusetts Medical Papers, vol. II. part 2.

† See Dr. North on spotted fever, and the Mas. Med. Papers, vol. II. part 2.

‡ Jam nova progenies cœlo demittitur alto. Virg. Eclog. IV.
Hic vero subitum, ac dictu mirabile monstrum
Aspiciunt; Virg. Georg. lib. IV

The epidemic of the present season has not been a new form of disease. It was certainly different in its character from the type of diseases which have been common among us for a series of years, which has induced some to consider it unprecedented in the annals of medicine. The records of our own country, will, however, furnish us with an account of the same form of disease, as it prevailed at Huntington, on Long-Island, in the winter of 1749, with great and alarming mortality.* By most of the European writers of the last century, we find many diseases described of the same malignant peripneumonic character, which may be identified with the present, without doing any violence to nosological arrangement. We may go still farther, and say, that from the time of the Coan oracle and genuine interpreter of nature, to the present day, accounts of the same form of disease may be found scattered through the mouldy pages of antiquity.†

It may be difficult for some to subscribe to our opinion, that it is a phlegmasial disease, on account of the diarrhœa, and more than common pungency of the heat upon the surface of the body. We all very well know, that such symptoms are by no means common to peripneumonic affections, especially as they appear in our country; and it is probable that the oldest of the profession among us, have no recollection of having ever witnessed a similar assemblage of symptoms. To corroborate our opinion, we shall adduce the experience of both ancient and modern times, which will irresistibly show that these symptoms have attended such forms of malignant peripneumonia, and have been in their consequences, either terrible or fatal. It did not escape the vigilance of the sagacious Hippocrates, for he says, " A pleuritide aut peripneumonia occupato, alvi profluvium accedens malum."*

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* See Dr. John Bard's essay on malignant pleurisy, in the Medical and Philosophical Register, vol. I.—One of the oldest and most respectable inhabitants in Newtown informs, that in 1749, it prevailed more generally, and with greater mortality in Newtown, especially among the old inhabitants, than it did at the present season. He recollects perfectly well too, its great mortality at the same time about Huntington.

† The following diseases, though described by different names, are closely allied to the present—viz. The peripneumonia putrida; thesis parisiens, 1752; peripneumonia maligna, of Sauvages; peripneumonia pestilens, of Schenkius; peripneumonia typhodes, Deplaigne, Journ. de Medicine, Septembre, 1757; pleuro-peripneumonia epidemicæ aumalæ apud Normanos, Marteau de grandvilliers observante, and the pleuritis putrida of Sauvages. Of the peripneumonia pestilens, Sauvage observes, "Peripneumonia pestilens Europam ita devastavit anno 1348, ut vix decima hominum pars superfuerit, si credamus Gallo et Schenkio; ea intra tres vel quatuor dies trucidabat." Sauvag. Tom. 2. p. 498.

The attention of a careful and accurate observer, was immediately arrested by the peculiar pungency of the heat upon the surface of the body; as great as was ever experienced in the most malignant and ardent forms of fever. This extreme degree of heat of the skin, some of our best writers have considered a very prominent feature of typhoid forms of fever; and have expressed their ideas of it in different ways. Dr. Moore, when treating of typhus, says, " on pressing the skin of the patient, a sensation of a peculiar penetrating heat remains on the hand for some minutes after; whereas the heat communicated by the skin of a patient in an inflammatory fever, is more transient." Sir John Pringle observes, that he has been sensible of an uncommon ardour, leaving an unpleasant sensation in his fingers for some minutes after feeling the pulse.‡ Dr. Huxham says, " there is a peculiar biting heat in malignant fevers."|| Dr. Wright has used the same language.§

Whatever may be the cause, it is certain, that there was this peculiarity in the form of the peripneumonia of the pre-

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* Hippocrat. Aph. 16. Sect. 6.

† Moore's Medical Sketches.

‡ Huxham's Works, vol. 2.

|| Pringle on Diseases of the Army.

§ Annals of Medicine.

sent season; which will warrant the conjecture of a febrile influence in the constitution of the atmosphere; but in what way this exists, or how it operates, is entirely beyond the reach and scrutiny of inquisitive man. Probably the season of the year only, determined the commotion or irregular action, induced by this epidemic influence upon the lungs, thereby producing a mixed form of disease. Such was its complex and fatal character, that it required all the vigilance and care, which the justly celebrated Heberden enjoins in febrile diseases. "In omni febre oportet vigilare, et quicquid mali oriatur, idoneis remediis succurrere."*

In addition to the above mentioned symptoms, we find that petechiæ and vibices, have been common in this form of peripneumonia, as it has prevailed in England. This any one may be satisfied of, by perusing the works of that careful and accurate observer, Dr. Huxham. A peripneumonic fever, which was very pestilential, raged and carried off numbers in 1746. There was a great load upon the breast and precordia, accompanied with violent pain of the head, and soon after delirium. The expectoration was very frothy and bilious, and proved of little service to the patient. Some were seized with profuse and weakening diarrhœas, and a suppression of expectoration, and the consequence was always terrible. In his essay on fevers, he says, "In malignant pleuro-peripneumonies, and peripneumonies, I have too often seen, and been sorry for very untoward mistakes in this matter, particularly in the years 1740, 41, and 45. And therefore, though the first bleeding may be very proper, the subsequent may not be so, nay, pernicious.† In another place, when speaking of certain peripneumonies which will not bear bleeding, we find the following remarks:—" And I have observed the same in several epidemic peripneumonies, particularly in the latter part of the year 1745, and in the beginning of '46; during which we had an epidemic peripneumony, in which, after a second bleeding, (and even sometimes after a single bleeding) the pulse and strength of the patient sunk to a surprising degree; and they ran into a sort of nervous fever, with great tremors, subsultus tendinum, profuse sweats, or an atrabilious diarrhœa, with a black tongue, coma or delirium; though at the bleeding the pulse seemed to be full and throbbing, and the pain, cough and oppression, so very urgent as to indicate bleeding very strongly."* Again, he says, "It was surprising how much the pulse and strength of the patient sunk after bleeding in such cases: with no small concern and astonishment, I several times observed a vast anxiety, fainting, cold sweat, and a thready intermitting pulse, very soon succeed it; though at the very beginning of the fever, and when the pulse seemed strong and throbbing before. I have seen this even in pleuro-peripneumonies, where the pain of the side was violent, the load at the breast great, and the cough considerable; otherwise the peripneumonic appearance might had been imagined to be a mere symptom of a malignant fever." I am very sure, says he, this putrid peripneumony never had a second bleeding with advantage; seldom indeed the first, unless there was some considerable degree of firmness and tension in the pulse.†

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* Vide Heberden's Commentaries.

† Vide Essay on Putrid Malignant Fevers, vol. 2.

The same form of disease, in all probability, is alluded to by Lancisi, and afterwards by Baglivi, when they enjoin the following caution as to bleeding:—"In pleuritide, peripneumonia, &c. si in sanguine è vena secta extracto non appareat in superficié crusta alba pessimum; si vero in altera sanguinis missione incipiat apparere, bonum; contra, si in secunda ne quidem apparebit, abstineto statim a sanguinis missione, aliter interficies agrotantem."*

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* Huxham's Works, vol. 2.

† Essay on Peripneumony, vol. 2. p. 211.

Dr. M'Bride, in speaking of the fallacious appearance of the buffy coat in pneumonic inflammations, and that there are inflammations where this crust is never seen, says, " but on the contrary, the blood is found in a broken and dissolved state, and the patients bear bleeding as ill as they do in putrid fevers."

" But when these inflammations take place in constitutions where the crasis of the blood has been previously injured by a putrefactive acrimony, or where they are complicated with fevers occasioned by infectious miasmata, such as have been formerly described, then the symptoms of extreme weakness and dejection, sickness, vomiting, petechiæ, and delirium, will be found superadded to the pain in the chest, cough, oppression, and difficulty of breathing."

" These complicated pleurisies and peripneumonies are constantly mortal, because the extreme weakness and dejection, hinder the large and repeated bleedings, which are the only things capable of removing the inflammation."

" In prisons, hospitals, and transport ships, where infectious putrid fevers prevail, it is not uncommon to meet with these malignant peripneumonies, as the reader may see in Huxham's Essay on Fevers."

" They have also," he observes, " been found to rage epidemically, in certain seasons, in different countries of Europe, and appear to be occasioned by a most corrosive species of acrimony settling on the lungs, which in a short time produces gangrene, not conquerable by either art or nature."†

Dr. John Bard, (whose unsullied integrity and professional reputation, united with the greatest urbanity of deportment, conciliated and endeared him to all; whose name will enkindle the most pleasing recollections; a name that will be enrolled on the imperishable annals of our country[*]) has left us a very valuable essay on the malignant pleurisy, which was very fatal at Huntington in 1749. Though this paper does not contain so fully as could be wished, an account of the symptoms and method of treatment; yet we presume to say that it was the same disease as the epidemic of the present spring. It is most consistent with strict nosological arrangement, to denominate the disease, which has been the subject of our examination, a peripneumony rather than pleurisy; and which, from remote antiquity, has been considered the most dangerous; though commonly, as Celsus correctly observes, has more danger than pain: "Id genus morbi plus periculi quam doloris habet."[†]

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* Caput de Pleuritide.

† See Dr. M'Bride's Practice of Physic, 4to.

The symptoms of the disease, as they are enumerated by Dr. Bard, warrant this opinion; for we have his own words that they were of a peripneumonic character, as will be seen by the following paragraph, which contains all that he has said of the symptoms and method of treatment, and which we shall quote to exhibit more clearly its identity with the late epidemic.—"The patient," says he, "in this malignant pleurisy, is first seized with a shivering rigour, which is soon succeeded by a pain in his back and head, an early disposition to vomit, with great oppression and anxiety. Soon after the fever is formed, these appearances are followed with an acute pain in the breast and side, resembling peripneumonic symptoms, attended with a laboured and painful respiration, a frequent cough, by which a crude, glazy, frothy spittle, slightly tinged with blood, is discharged; light deliriums through the whole course of the disease, not constant, but frequently returning; the tongue for the most part parched and dry; but the skin inclined to be moist and sweaty, which, if encouraged, the skin and coats of the eyes become extremely yellow; the blood appears rather dissolved and thin than viscid; the pulse in most cases soft and frequent. This disease generally ends in the death or safety of the patient on the fifth day, sometimes on the third or fourth, from the invasion of the distemper. In those that have died, it has been observable, that some hours before their death, they have recovered their senses, and appeared easy, but soon after have unexpectedly and suddenly expired. Most of these symptoms, together with the time it takes in going through its stages, are similar to the stationary fever,* excepting the pain in the side, which appears to me to arise from the acrimony of the disease, which (in its simple state used to be thrown upon the stomach and bowels, producing violent pains, inflammation, and sometimes mortification of the parts) is by the present disposition of the air, and season of the year, favouring the production of an epidemic pleurisy, determined upon the pleura and lungs, and produces its tragical effects upon these organs. It is further observable, that the disease is aggravated by the common method of treating an essential pleurisy, and is found to be relieved by sweating and diluting methods, which is a prevailing argument to consider it in this light, as that method was always found to be the most successful in curing the original fever; of which kind I suppose this to be, and the pain in the side and breast only accidental symptoms."†

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[*] In speaking of this venerable physician, we are reminded of what the great historian Tacitus, has said of his illustrious father-in-law Agricola, and think it not inapplicable to the present occasion.—"Finis vitæ ejus nobis luctuosus, amicis tristis, extraneis etiam, ignotisque non sine cura fuit. Vulgus quoque, et hic aliud agens populus, et ventitavere ad domum et per fora et circulos locuti sunt."

Tacit. Vit. Agric. Tom. 2. p. 301.

[†] Vide Celsus, lib. IV. cap. 7. p. 151. de morb. pulmon.

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* By the stationary fever is meant the yellow fever of our cities.

† See Dr. John Bard's Essay, Med. and Phil. Register, vol. i. p. 417.

A malignant peripneumony prevailed in the neighbourhood of Burlington, Vermont, in the winter and spring of 1810, with very considerable mortality. It run its course generally in about six or eight days, ending either in death or a favourable crisis. It predominated over all other diseases, for no person became sick without having some pain in the breast, side, or shoulder; it seized very suddenly in most instances, without being preceded by any premonitory symptoms.*

In giving to the public this little essay on an epidemic disease, I have no preconceived theory to subserve, a predilection for no particular or favourite doctrine; my object has been purely the love of truth, the advancement of the healing art, and the welfare of mankind. With this belief, I shall always rejoice in recollecting the classic words of the celebrated Pliny, "et quatenus nobis denegatur diu vivere, relinquamus aliquid, quo nos vixisse testemur."†

New-York, 7 *mo.* 15*th*, 1812.

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* See an extract of a letter from Dr. Powell, in North on Spotted Fever, p. 38.

† Plin. Epis. lib. 4. epist. 7.

V.

OBSERVATIONS *on the Nature and Treatment of the* MALIGNANT *or* YELLOW FEVER, *which prevailed in the Island of Grenada, W. I. in the years* 1793, 94, *and* 95, *in a letter to* DAVID HOSACK, M. D. *&c. from* JOHN STEWART, M. D. *&c. &c.**

New-York, Nov. 12th, 1805.

Dear Sir,

I HAVE received your favour of this date, desiring information concerning the fever which appeared, and proved so fatal, in Grenada, in March, 1793. I feel much disposed to comply with your request, but regret that my time will not allow me to do so in a manner satisfactory to myself; at all events, I hope you will make allowance for any inaccuracy I may commit in referring to circumstances which occurred so long as twelve years ago, especially, as I am possessed of no memorandum respecting the disease, all my papers having been destroyed in the insurrection which occurred in that island in 1795.

It may be necessary to premise, that I had been engaged in an extensive practice in the quarters of St. Andrews and

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* None can be ignorant of the name of Dr. Stewart, who are at all acquainted with the controversy which has so long engaged the attention of medical writers, relative to the nature and character of the yellow-fever, as it has prevailed in the United States, and in different parts of Europe. Our readers will recognise in him one who occupies a distinguished place in the list of those great men who have supported and defended the doctrine of the contagious nature and specific form of this disease. His great learning, and extensive practical knowledge, eminently qualify him to act as umpire on this subject, and stamp his opinions with an authority not to be impeached by the gross aspersions and futile reasonings of a host of ordinary writers.—ED.

St. Patricks for nineteen years previous to the period referred to. My place of residence was on the east side of the island, and on the confines of those two parishes, about twenty-four miles from St. George, the capital, and upwards of four miles from Grenville Bay, the second harbour in the colony; the tract of country between my abode and the latter, is flat, and the shore low and swampy; it is consequently extremely unhealthy in the fall of the year. I had become, of course, well acquainted with tertian fever, under its various forms, of intermittent, remittent, and continued types. It is, however, worthy of remark, that I do not recollect an instance of an epidemic disease occurring among the white inhabitants, in any part of the island, from January to July or August, previous to the year 1793.

My first acquaintance with the fever in question was as follows: In the month of March of that year, I went on board the ship Adventure, then lying in Grenville harbour, to visit the carpenter, at that time under my charge, for a gunshot wound in his hand. While there, Captain Remington arrived from St. George's by sea; he had come round in a drogher, and had had heavy squalls, with rain, in his passage to windward. He then complained of being feverish, and seemed low spirited; he had heat of skin, his pulse full, and under one hundred, head-ache, pain in his back and limbs, and over his whole body. These symptoms I imputed to cold, caught in his passage up, and accordingly took eight ounces of blood from him, which, unexpectedly, neither exhibited the buffy coat, nor the coagulum any degree of contraction, or consequent separation of serum. He took an emetic of ipecacuanha in the evening, and a dose of glauber salts the following morning. During three days, I continued to visit him, his pulse did not exceed one hundred, nor was the heat of skin considerable; he took, occasionally, small doses of antimonial wine, with the addition of laudanum at bed-time, and made free use of tepid drinks. At the end of that time, I was under the necessity of putting him under charge of a neighbouring practitioner, having a call to the other side of the island. On leaving him, I certainly did not entertain any idea of his being in danger; I was, however, forcibly struck with, and could not well account for, an uncommon degree of despondency of mind that was then present, and it was not possible to remove the impression, that he was to die; nor was I the least surprised, on going to Grenville some days after, to be told of his death; and, more especially, to hear of that event having been preceded by hæmorrhage from his nose, stomach, mouth, and urinary bladder. On this occasion, while in conversation with some gentlemen on the fate of this unfortunate man, I could not help noticing the malignancy of the case, and the difference in the train of symptoms from what I had ever witnessed to take place in the worst cases of our endemic fever. But a few minutes had elapsed, when a gentleman arrived from St. George's; I had no sooner mentioned Capt. R.'s death to him, and my surprise thereat, when he instantly replied, it was none to him, for Capt. R. had eat and slept on board the ship Hankey during several days that he was in town. This was the first notice I had of such a vessel being in the colony, and, therefore, anxiously requested he would explain himself. This he did, by saying, that the Hankey, Capt. Cox, had arrived some time before, after carrying a number of settlers from England to the Coast of Africa, where she had remained for some months, and that during her stay, the greater part of those unfortunate people had been carried off by fever; and concluded, by saying, that there was at that time a cursed infection lurking on board of her; that the mate of the ship Baillies had died, or was dying, and several other seamen were very ill when he left town. The melancholy scene that afterwards followed at St. George's, in '93 and '94, is well and amply described by my respectable friend, Dr. Chisholm, in his well known work on West-India Diseases.

Capt. Remington had been removed on shore the day preceding his death; but no case of fever occurred, either in the family where he died, or on board of his own ship, his cloaths and bedding having been destroyed, and every precaution taken to guard against infection, in consequence of the information above referred to.

The fever was, however, brought soon afterwards to Grenville harbour, by a ship or two that came from St. George's to load for England; and from them the disease was communicated to other vessels lying there. A few cases of this fever also occurred in the village of Grenville, but it did not spread.

An insurrection of the negroes broke out in the island early in March, 1795, and soon thereafter, I believe in May, this fever again appeared. It became frequent in the town of St. George's, in the course of the fall, and proved fatal to many of the inhabitants, in consequence of the deprivation of their usual comforts, and the fatigue they had undergone for several months before. I resided then chiefly in town, and had an opportunity of seeing a great many people labouring under the disease. As to the *character* of this fever my experience has fully satisfied me, that it was specifically distinct from every form of the indigenous tertian remittent which I had ever observed; because it appeared at a season of the year which I had always found healthy, during a period of nineteen years I had resided in the colony.

Because it did not particularly appear in those situations where bilious remittent fever usually prevailed during the unhealthy season of the year.

Because there was an evident difference in the character and type of the two diseases; there was a greater despondency of mind in this fever; the eyes were more muddy and inflamed; there was commonly a deep seated pain in the eyesockets; the motion of the eye-balls was attended with uneasiness; the pain in the back and limbs was greater than in bilious fever; the vomiting was not of so violent and straining a nature, nor were there such evacuations of bilious matter; the black vomit, which I consider one of the characteristics of this disease, generally occurred at an early period; the yellowness was of a dingy hue, not of the real icteric tinge accompanying cases of bilious fever; the delirium was in many instances of a peculiar nature and much resembling a state of intoxication; hæmmorrhage was more frequent, particularly by urine and from the stomach and intestines. Patients, on several occasions, made exertions, not long before death, that I never witnessed in bilious fever. I have known a patient to get up, dress himself and walk about his chamber a very short time before his death. Medical practitioners, before getting well acquainted with the deceitful nature of the disease, not unfrequently declared their patients out of danger when the fatal issue took place an hour or two after their departure.

Because I never knew this fever terminate within a few weeks in intermittent, as tertian, remittent, or bilious fever commonly does.

Because the degrees of weakness produced by this fever is greater, and the recovery of flesh and strength are more gradual and slower in this than in bilious fever.

Because I did not find the same mode of treatment consonant in both cases of fever; for the early, bold and free use of bark, which I have found very generally to answer in bilious fever, seemed to aggravate this fever, and to hasten the fatal issue. Do not consider me whimsical when I assure you, that I was very often sensible of a peculiarly bad taste in my mouth while by the bedside of my patients, and particularly if blankets were used as a covering.

That this fever was contagious, I concluded from the manner in which it broke out and spread. It first appeared in two or three vessels that had a communication with the Hankey;

and from these sources it gradually extended itself to other vessels in the harbour; but not to all, for where attention was paid to prohibit communication with infected ships, such vessels escaped. After some time it got on shore, both into town and in the garrison. There is also reason to think that it was carried from thence to the adjoining islands, as it appeared at most of those to windward within two months of its breaking out at Grenada; and some time thereafter it showed itself at Jamaica, and alternately, I believe, in September at Philadelphia.

Its contagious nature also appeared from many instances of men, in 1793, and 1794 going to St. George's on business, and being attacked a few days after their return to the country with this fever, to several of whom it proved fatal; but I must observe that I met with no instance of the disease being communicated to others, either visitors or attendants. It is indeed true, that every attention was paid to keep the chamber of the sick well aired, their linen frequently shifted; and when a fatal issue took place, every article of wearing apparel and bedding was commonly destroyed.

From knowing several instances of young men who got wounded in 1795 and 1796, having been sent for convenience and proper attendance, to town, and during their cure were attacked by this cruel disease, and on some occasions fell a sacrifice thereto.

From instances occurring of people expressing a consciousness of the time when they received the contagion while visiting acquaintances labouring under the disease.

From a thorough belief in the minds of all the medical gentlemen in Grenada who witnessed the disease, that it was so; let it be observed, however, that one of the most respectable practitioners in St. George's, and a particular acquaintance of my own, would not allow at *first*, that it was contagious. And lastly, From a full conviction that I, as well as some other medical gentlemen, contracted the disease in our attendance on the sick.

Respecting the propagation of this fever, I am decidedly of opinion that it was occasioned by visiting infected apartments, or by the near approach to, or contact with people labouring under it. There is every probability also, that the infection was brought to Grenada by the Hankey; but what its nature was, or whether it originated on board in consequence of the number of sick crowded together while labouring under the endemic of a warm climate, and that in a sultry, moist atmosphere, or whether it proceeded from the infection of jail fever, carried from England, and which only showed itself in circumstances favourable to its propagation, are questions I do not take upon myself to answer.

That vegetable and animal matters in a state of putrefaction do produce disease, is not to be denied; but that vegetable matter only in a state of corruption is on many occasions harmless, is evident, from the very offensive heaps of cotton seed, and the pulpy covering of the coffee berry which are daily to be met with in Demerara without being considered as a cause of fever; nor should this circumstance be omitted, that when fever does prevail, it is at a season when those causes do not act powerfully.

In respect to the cure, various methods were tried by different practitioners; but I am sorry to say the proportion of deaths was great under every mode of treatment. The plan I generally pursued was to administer as early as possible a brisk purge of jalap and calomel; and after the operation of this medicine I had recourse to small doses of James' powder from time to time while the febrile action lasted; to this was occasionally added a little calomel to keep the bowels open; and the warm bath, with a large allowance of lime juice, was sometimes had recourse to, in order to aid the antimonial in determining to the surface; ultimately bark was given; blisters, opium, spirit. nit. dul. æth. were had recourse to according to the nature and the urgency of the symptoms that occurred.

When the fever first appeared, I had great reliance on a free and early use of the bark, but a little time convinced me of my mistake. Blood-letting I used in two cases only, but it afforded no abatement of the symptoms, nor did the patients bear the evacuation well; the appearance of the blood also, on which I place much confidence, did not indicate the propriety of repeating the operation.

Few men had made a more free and general use of calomel than I had done from the year 1780, in all cases of fever originating from a local cause, particularly in pulmonic and hepatic inflammation, and in dysentery. I had, however, never exceeded fifty grains in the 24 hours; nor did it occur to me that the free use of this medicine could be had recourse to with benefit in the fever until it was strongly recommended by Dr. Chisholm. I accordingly tried it; sanguine in expectation of benefit therefrom, but I am sorry to add that it did not prove an effectual remedy in my hands.

Under these circumstances you may readily suppose I felt much alarmed when this fever again appeared in 1795; and it gave me pleasure to hear of a new remedy which had been tried and proved successful in one case; this was the cold bath. I instantly had recourse to it, and the more readily on recollecting to have used it myself so long before as 1776, in a number of cases of confluent small pox, and with the most evident beneficial effect.

The consequence was, that I had reason to think many lives were saved by it. The manner of applying was by dashing two or three large pails-full of sea-water on the head and shoulders with force, laying the patient immediately after between blankets and supplying him frequently with warm tepid drinks; the effect expected, and that frequently ensued, was a full and free perspiration. If this did not ensue the James' powder with a little calomel was occasionally repeated, as was the cold bath generally three or four times a day. I trusted to the cold bath entirely in my own case in Sept. 1795, having previously taken a dose of jalap and calomel. The good effect of the cold bath on this occasion I mentioned to Dr. Chisholm, but not having perused his second edition, I do not know whether he has noticed it. He also was made acquainted with the little benefit I derived from exhibiting the calomel, as recommended by him in my practice.

The above is the result of my knowledge and experience in the treatment of the fever as it occurred in Grenada during the years 1793, 4 and 5.

Yours, &c.

JOHN STEWART.

Dr. David Hosack.

VI.

Facts *relative to the contagious nature of the* Yellow Fever *in the pure air of the country: In a letter to Dr.* William Currie, *of Philadelphia, from* David Hosack, M. D. *member of the College of Physicians of Philadelphia, &c.*[*]

New-York, May 30th, 1805.

Dear Sir,

You will find among some of my letters addressed to you upon the yellow fever, an imperfect memorandum of this disease having been communicated by contagion at Huntington on Long-Island.

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[*] The yellow fever is generally considered a non-contagious disease in the pure air of the country: yet that it is at times contagious even in such situation, the accounts published by the College of Physicians of Philadelphia, have fully proved. For further evidence, if it were necessary, we would refer to the interesting communication of Dr. R. C. Moore, contained in vol. 2d, p. 22—25, of the Register; to p. 177, of the same volume, and to the present article now first printed.—Ed.

I this morning availed myself of an opportunity which presented of obtaining a more satisfactory and circumstantial statement of the facts than I have hitherto been able to procure. This information I received from Mrs. Dorothy Conklin, the present wife of Mr. Richard Conklin, who resides at West Neck, four miles distant from the town of Huntington, and in whose family the disease prevailed with almost unexampled mortality. The present Mrs. Conklin, at the time the yellow fever prevailed at West Neck, was a friend and neighbour of Mr. Conklin; attended his family in their sickness; saw them in every stage of the disease, and had the best opportunity of knowing the facts she has stated to me: these I shall relate as nearly as possible in the order and language in which she communicated them.

In the summer of 1795, when the yellow fever prevailed in New-York, Mrs. Smith, the daughter of Mr. Conklin, resided at Peck-slip, to which part of the city the disease was chiefly confined in that year. Mrs. Smith, upon being taken sick, went immediately to her father's house at West Neck, where she died three days after with the black vomit, and her skin, to use Mrs. Conklin's expression, as yellow as saffron. Her brother, who resided in New-York, was taken sick about a fortnight after; he also went to his father's house at West Neck, where he died after three or four days illness with the black vomit and a yellow skin. During his illness, Mrs. C. adds, he bled much at his nose. His mother, Mrs. Conklin, who had constantly attended upon him, and washed his clothes, was next taken sick, and died in less than a week after the death of her son. The present Mrs. C. (then Mrs. Bush,) was constantly with her, and states that she laid in a state of stupor several days; that she had the black vomit, that her skin turned yellow, and was remarkably spotted.

Doctor Sandford, who was the physician of the family, and had been very constant in his attendance upon them, was next taken sick. He felt much indisposed while Mrs. Conklin was dying; he went home, but never afterwards left his house; he died in a few days. His attending physicians unanimously pronounced it to be the yellow fever. Mrs. Conklin visited him in his illness. His bed being opened by Mrs. Sandford, Mrs. C. observed his skin to be very yellow, and was at the same time sensible of an extremely offensive smell, such as she had observed in no other sort of fever. She now was fearful of having taken the disease, especially as she had been so much exposed to it. She immediately took a dose of salts, and the day following began the use of bitters, to which remedies she ascribes her exemption from the disease.

In the summer of 1798, when the yellow fever prevailed with its greatest mortality in New-York, another daughter of Mr. Conklin, named *Polly*, fifteen or sixteen years of age, came to town upon a visit to her friends. At this time she very imprudently visited Mrs. Jones, (wife of William Jones,) who was then dying of the yellow fever. She returned home to the country; and immediately upon her return was taken sick with an acute pain in her head, back and limbs, attended with a very violent fever; a profuse purging came on, which Mrs. Conklin considers as having been very serviceable, as her fever soon after abated, and she recovered. As to the nature of the fever she states, that the physician had no doubt; he pronounced it to be unquestionably the yellow fever. The result proved an unhappy confirmation of his opinion. Her niece, the daughter of Mrs. Smith, about three years old, who was constantly with her during her illness, and laid upon the same bed, was next taken ill with fever, attended with an incessant vomiting: she died in less than a week. Another daughter of Mr. Conklin, named Patty, about twenty years of age, who had had the particular charge of the child, had never left the cradle, and who had also attended upon her sister, was next taken sick. She began to complain before the death of the child; she was attacked with chill and fever.

Dr. Udall, who had resided in the West Indies, and had been very conversant with this disease, was called; he pronounced it to be the yellow fever, but encouraged Patty very much, telling her she would no doubt get well. As is frequently the case in this species of fever, the physician saw no cause of alarm even when the greatest danger existed. The black vomit soon succeeded, she became delirious, her skin assumed the yellow colour, and she died in less than three days from the time of her attack. A boy about 12 years of age, who had been taken into Mr. Conklin's family as a domestic, was next taken ill; he had been frequently in the room of the sick, and had been especially attentive to the youngest child, (the daughter of Mrs. Smith,) of whom he was very fond: he was attacked as the others had been with acute pain in the head and back, with vomiting, in a short time he became very yellow, and the discharges by vomiting, as black as the grounds of coffee, to use Mrs. Conklin's expression. Although he was taken sick a day or two before Patty died, he did not survive her more than two days. Mrs. Conklin being very much alarmed by the great mortality of this disease, did not visit him but once, and only when he was first taken ill. Her husband, Mr. Brush, was obliged to lay out this lad, which disagreeable office Mrs. Brush had performed for all that had already died in the family. Such was the dread excited by this disease that it became almost impossible to procure the necessary assistance for the sick; the mother of the lad was so much alarmed that she never visited her child during his illness. The boy, it was supposed, took his disease from the youngest girl whom he had caressed and frequently carried about in his arms during her sickness. The next person in this distressed family who was seized was Sally Long, about 17 years old, a cousin of Mr. Conklin. She had lived in the family of Mr. Brush as a spinster. Mrs. B. now Mrs. Conklin, having by her dread of the disease been compelled to return home, Sally Long volunteered her services and attended upon Patty and the boy. In a day or two after the death of the latter she was attacked with the same symptoms as the others had been. As the disease proved so contagious, Dr. Udall now advised the family to remove from the house. Sally Long was immediately conveyed to the house of her father Capt. Long. She recovered after several days severe illness.

Mr. Conklin's eldest daughter, Mrs. Place, wife of Capt. Place of the town of Huntington, had visited her sisters at West Neck; had been a few days at the house, and had attended some of the family last sick. She was next taken ill, and was removed to the house of Mr. Place, her father-in-law. Her symptoms were similar to those of the other sick, but not in so violent a degree. Her skin, Mrs. Conklin observes, was yellow and the irritation of her stomach considerable, but she recovered. Upon the day Patty was buried, her brother, Harry Conklin, who had attended upon her in her illness and was at her funeral, was taken sick. On his return from her funeral he began to complain, expressing to his uncle Jesse his disagreeable feelings, and his apprehensions that he had taken the fever. He remained that night at his father's house, but upon the succeeding day was removed to the house of his father-in-law Mr. Gilbert Carr, where he died in a few days. He was attended by Dr. Udall. Mrs. Conklin also adds that his skin became yellow; that he had the black vomit, but that he, to the astonishment of every person, retained his senses to the last moment, conversing upon religious subjects with the most perfect composure.

It will be proper to add that the town of Huntingdon and its neighbourhood, is remarkably healthy; its situation high, and has a northerly exposure.

If it were necessary Mrs. Conklin will at any time add her affidavit of the correctness of the foregoing statement.

I send it to you without comment, to make such use of it as you think proper.

Your's with respect,

D. HOSACK.

The following is the certificate of Dr. R. Udall, who attended the family at the time they laboured under this calamity.

New-York, Nov. 15, 1809.

Sir,

AFTER a careful perusal of the statement made by Mrs. Conklin; of the fever as it appeared at Huntington, on Long-Island, in the years 1795 and 1798, I have no hesitation to say that the facts it contains are correctly related by Mrs. Conklin, and that she is a lady of respectability and veracity, and can give you a more correct statement of it than you can otherwise obtain. **RICHARD UDALL.**

DR. HOSACK.

VII.

ACCOUNT *of the* POWLES HOOK STEAM FERRY-BOAT, *in a letter to* DR. DAVID HOSACK, *from* ROBERT FULTON, *Esq. Fellow of the American Philosophical Society, &c.*

(See the annexed Engraving, by Leney.)

[The perfect success of Messrs. Livingston and Fulton in their invention and establishment of steam boats for the accommodation of passengers between the cities of New-York and Albany, drew the attention of Mr. Durand, Judge

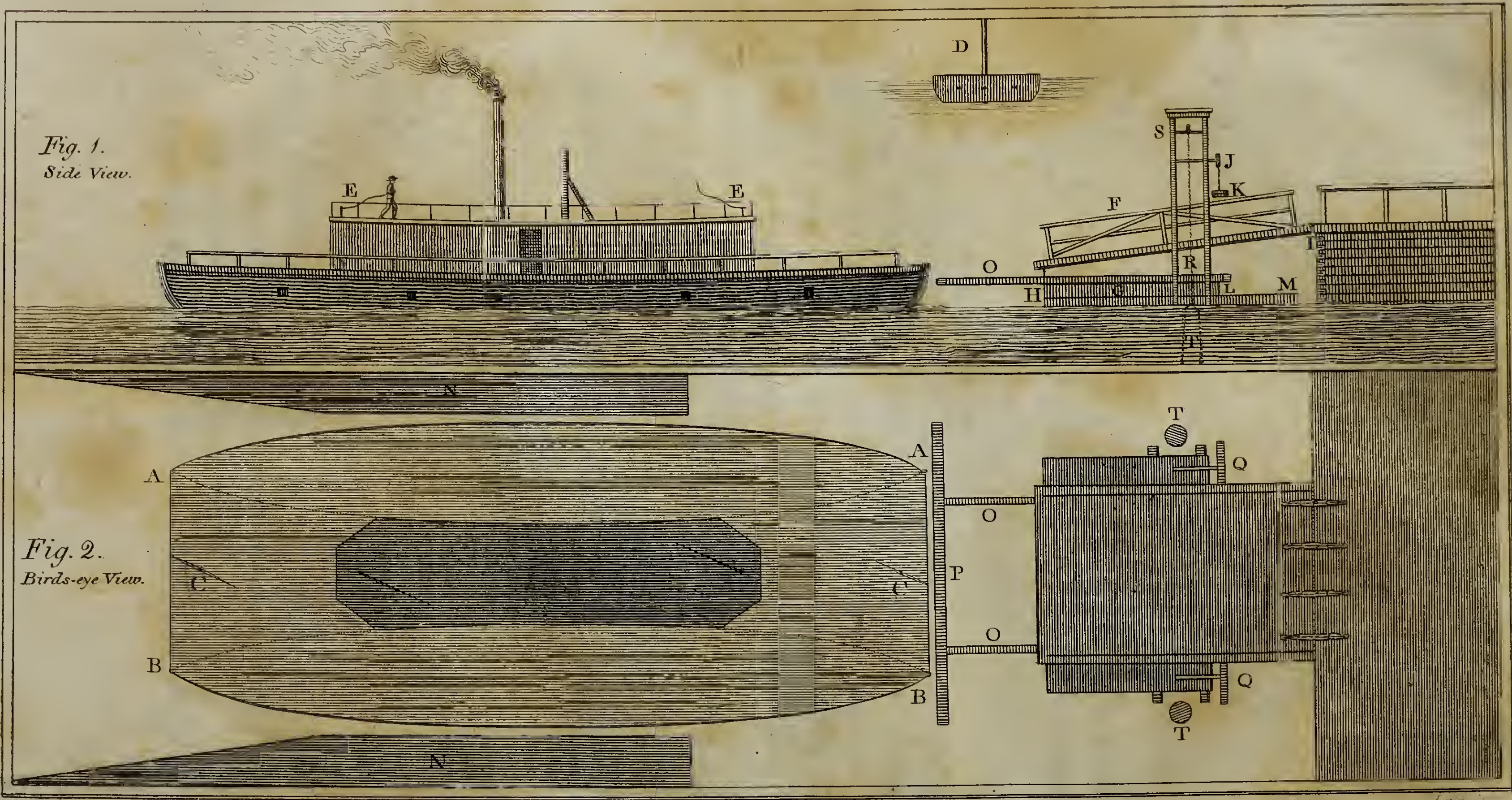
Fig. 1. Side View.

Fig. 2. Birds-eye View.

FULTONS-STEAM FERRY BOAT.

Boudinot, Gen. Cummings, and some other gentlemen residing at Newark, to the possibility of improving the communication between New-York and Jersey city by means of steam ferry-boats. In the autumn of 1809, a company of gentlemen subscribed fifty thousand dollars to carry the plan into effect; negotiations were commenced with the corporation of New-York and the proprietors of Jersey city for a lease of the ferries for nineteen years, and Mr. Fulton was applied to, to construct such a boat as in his judgment would, under all circumstances, answer the best purpose for carrying passengers, coaches, horses, waggons, cattle, &c. &c. Acting for a liberal company, and unrestrained in his plans or expenses, the inhabitants of this city have seen with the greatest pleasure his complete success. The steam ferry-boat approaches nearer to the conveniences arising from a bridge than any thing which art has yet produced. And for this passage of Hudson river, where a bridge would interrupt or destroy an important navigation, the boat is superior to a bridge. During five or six weeks in the severity of winter the ice may render the passage difficult, but it is evident, that among floating cakes of ice this boat can act better than any other; by reversing the motion of her water wheel she can move either end foremost, and not depending on wind, but on her engine, she can be worked through the openings in the ice in every direction. It is contemplated to add ice breakers to the boat which are to be worked with the steam engine: should they succeed they will improve her passing in winter, on the result of which experiment we will speak in the spring. On comparing this invention with a bridge, the expense is an important consideration. The width of the river is from one and a quarter to one and a half mile. The depth of water on an average fifty feet. In such a situation a permanent bridge, with stone piers, could not be built for less than two millions of dollars; whereas the present establishment, when finished, consisting of two steam ferry-boats, with the wharves and floating bridges for entering the boats, will not exceed fifty thousand dollars. Such economy is a sufficient inducement to establish steam ferry-boats in a variety of places in the United States where expense will prevent the building of bridges, and we hope soon to see a similar establishment on the *East river* between New-York and Long-Island. Ed.]

The following is a copy of a letter to Dr. David Hosack, from Mr. Fulton, describing the boat.

Sir,

At your request I have sent you a bird's eye and side view of the Powles-Hook steam ferry-boat and floating bridge, by which every thing enters, or is landed from her: my reasons for her particular form and arrangement of machinery are as follows:

First. She is built of two boats each ten feet beam, eighty feet long, five feet deep in the hole; which boats are distant from each other ten feet; confined with strong transeverse beams, knees and diagonal traces, forming a deck thirty feet wide, eighty feet long. To give her more strength she is held together by four inch traces, each two inches square, which pass through her one foot above the water line and key on strong plates on the inside of each boat. Reflecting on a steam ferry-boat for Hudson's river, the waves usually running up or down, I found a great breadth of beam absolutely necessary to prevent the boat rolling in the trough of the sea; this is attained by two boats and one open space giving thirty feet beam.

Second. By placing the propelling water wheel between the boats it is guarded from injury by ice or shock, on approaching the wharf or entering the dock, which operation being performed twenty-four times in twelve hours, allows no time for fending off with boat-hooks. To give despatch and convenience it is necessary the boat should arrive at the bridge without the possibility of any injury; hence all important parts of the machinery should be carefully guarded, particularly the propelling wheels.

Third. The whole of the machinery being placed between two boats on the beams over the open space leaves ten feet wide on each side, on the deck of each boat for carriages and passengers. One side is appropriated to carriages, horses, cattle, &c. the other having neat benches and covered with an awning, is for passengers; on the latter side there is a passage and stairs to a neat cabin which is fifty feet long and five feet clear from the floor to the beams, finished with benches for passengers in rainy or bad weather. In the winter there will be a stove in this cabin, which will add much to the comfort of passengers while navigating through the ice.

Fourth. Although the two boats and space between them give thirty feet beam and proportionate stability, yet they present sharp bows to the water, and have only the resistance in water of one boat of twenty feet beam, which diminution of resistance gives speed in crossing.

Fifth. The space from *stem* to *stem*, that is, from A A, to B B, of each boat, is twenty feet wide, which gives ample room at each end for carriages or persons to enter or go out of the boat.

Sixth. Both ends being alike, and each having a rudder, she never puts about. At New-York the carriages and horses enter at one end of the boat, the horses' heads toward Jersey; on arriving, they go out at the other end without changing the line of direction; in like manner, when coming from Jersey to New-York: thus the shortest possible and quickest movement of all that is to pass, is made to save time and secure convenience. Her rudders, which are placed as at C C, are equipollent, the iron shaft which serves as a rudder post, standing in the middle of each as at D, by which construction the pressure of the water being equal on each side of the centre, it can go either end foremost. With yokes and parallel bars, the movements of the rudders are carried to the helms at E E, the only position where the helmsman can have a full view of all round the boat, and see how to steer her into dock. It was at one time my intention to put a rudder on the bow of each boat, and work them with a connecting bar, but considering that such rudders while acting as tow would be injured by ice, or destroyed by a shock against a wharf or timbers, and knowing that the greatest current of water is exactly behind the wheel and between the two boats, I placed them as delineated, where they answer every desired purpose, and are guarded from injury. In my first sketches I had made the inside line of each boat straight, that the water might have a free passage from one end to the other, but the disadvantages of such a mode of construction would be, that the whole of the inside lines would act as leeboards, rendering it difficult to put her about, or to work her up in the tide. Had this boat been moved by wind, such a form to prevent leeway would be advantageous, but moved by steam, the less water she draws, and the easier she moves over it, in every direction, the better; her bottoms are therefore made rounding with very little dead rise. Another material error which would have arisen from straight insides, would be that each bearing being but half a boat, the two could not give more breadth of beam, or so much buoyancy as one of the present boats; and to give the thirty feet beam it would be necessary to have a vacant space between the two insides of twenty feet, which long and hollow bearing would produce weakness. Such a boat to carry the came weight would draw near twice as much water as the present steam boats, and create a resistance in the water equal to the present resistance by breadth of beam.

Seventh. F represents the floating bridges, of which there is one on each side of the river. G is a coffer, twenty-four feet long, twelve wide, four deep; which gives a superficies of two hundred and eighty-eight feet, or nine tons' weight, to press it in the water one foot, or one thousand five hundred pound to press it in the water one inch. This great resistance gives stability while carriages or heavy waggons enter the boat. The bridge is thirty feet long, twenty wide, fastened by four strong hinges to the coffer at H, and to the wharf at I; thus the bridge rises and falls with the tide, and is always exactly even with the end of the boat; when low water, there is an easy descent into the boat; at half flood, the boat, bridge and wharf are on a level; at high water, there is an easy descent from the boat to the wharf. As the weight of the bridge is on one edge of the coffer at H, to prevent it sinking on that side and rising on the other, a chain is fastened to the bridge which passes over the pully J, with a heavy weight K. Such an application on each side of the bridge pulls it up in the middle, and pushes down the coffer at L; added to which, a pine log, one foot square, is bolted on each side of the coffer as at M, with two transverse logs dovetailed into them, of which the weight and leverage retain the coffer in a horizontal position.

The next and last thing to be discovered, was how to make the boat arrive at the bridge without the aid of boat-hooks, or any pushing, or pulling, or loss of time, or shock: the latter being the most material to guard against, for this purpose the dock which receives her is one hundred and eighty feet long, seventy feet wide; the bridge is fastened to the middle of the bulk head: The boat being only thirty feet wide and the dock seventy, leaves twenty feet vacant on each of her sides; in those twenty feet spaces, and on the water, there are floating stages made of pine logs, which lie parallel to the boat for thirty feet, and then run diagonally to the extreme end of the wharves, so that the boat when coming in hits within the seventy feet, and the stages guide her direct to the bridge. The stages are indicated N N.

To prevent shock, there are two pieces of timber, each eight inches square, as at O, which move on rollers, and run out between the bridge and coffer; the two are connected by a cross bar P, and under the bridge by another cross bar Q; to this latter cross bar, and on each side of the bridge there are ropes fastened, which ropes pass under pullies that are fastened to the coffer at R, rise up and pass over pullies at S, descend and fasten to buckets at T, which buckets of oak, strongly hooped with iron, are fifteen inches diameter, six feet long, and, when full of water, will weigh about one thousand eight hundred pounds. When the fenders O are projected to the position delineated, which is about ten feet from the bridge, the buckets are down in the water, leaving their upper rim about three inches above the surface. It is the weight of the buckets which drives the fenders out to their present position. Each bucket has four holes in the bottom of an inch diameter, by which the water enters as they descend; and which lets out the water as they rise. In case the resistance should be too great for the boat to come close to the bridge, the water running out of the buckets will diminish it and let the boat arrive at the position required. To prevent a shock the whole force must be gradually diminished to annihilation; the resistance to the boat must be little in the commencement and increase until the whole power is destroyed: fortunately this contrivance produces the desired effect; when the buckets are in the water they are nearly bouyant, but the moment the boat strikes the cross bar P, and it begins to run in, the buckets come gradually out of water and grow heavier each inch they rise, increasing resistance until the momentum is destroyed, and the boat arrives at the bridge without shock, where the passengers, carriages and horses immediately move out, and others enter. In the present state of this part of the machinery, to prevent shock, it is necessary the men should be attentive to stop the engine in time. The most perfect machinery is that which leaves as little as possible to the care of men. I have some additions to make, which will prevent the possibility of shock even in cases where men may mistake, or be careless. In a new combination of this kind it is not to be expected that every thing should work to the best advantage in a first experiment, or that every requisite should be foreseen. The boat which I am now constructing will have some important improvements, particularly in the power of the engine to overcome strong ebb tides; from which again other improvements will be made, as in all other new inventions. The present boat crosses the river, in a calm, in fourteen minutes; her average time is twenty minutes. She has had in her at one time eight four wheel carriages, twenty-nine horses, and one hundred persons, and could have taken three hundred persons more. From the success of this experiment there is the pleasing prospect that boats of this kind will facilitate the passage of many of our wide rivers and bays, and prove an important benefit to our country.

I am, Sir, respectfully,
Your most obedient,
ROBT. FULTON.

REVIEW.

Art. I. Memoirs *of the* Connecticut *Academy of Arts and Sciences*, Vol. 1. Part 1. New Haven. O. Steele & Co. 8vo. pp. 216. 1810.

Distinguished, as the United States unquestionably are, for the number and respectability of their literary associations, still we believe they cannot with propriety boast of more than two well established institutions, devoted to general science and experimental philosophy, who regularly publish memoirs on these branches of knowledge. The institutions to which we particularly allude, are the American Philosophical Society, whose meetings are held at Philadelphia, and whose foundation was laid as early as the year 1744;* and the American Academy of Arts and Sciences, held at Boston, established in 1780. From the complexion of the volume now before us, we have no hesitation to add to this small number the Connecticut Academy, as being from its plan and objects, more than any other of our establishments, nearest allied to those we have just particularized.

The Connecticut Academy was organized in the year 1799, and the gentleman chosen to preside over its concerns is the Rev. Dr. Timothy Dwight, the learned and excellent President of Yale College. As the value of a work of the kind now before us must necessarily depend upon the character of the individual memoirs of which it is composed, we shall take some notice of them separately, in the order in which they are given. They are seventeen in number.

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* See the interesting letter of Dr. Franklin to Lieutenant Governor Colden, contained in the Register, vol. 2. p. 203.

1. *A Dissertation on the Supposed Change in the Temperature of Winter: by Noah Webster, jun. Esq.*

That the winter cold is less severe at present, in some parts of Europe and Asia, than it was two thousand years ago, and that it is decreasing in some parts of America, seems to be an opinion that has generally prevailed. This opinion, as it respects Europe and Asia, has been supported by Buffon, Gibbon, Hume, the Abbe du Bos, Rees, and Pelloutier. As it respects America, it has been supported by Jefferson, Williams, Holyoke, and others.

The three gentlemen last named conceive, that within the last century, the temperature of our winters has been greatly meliorated. This was a very comfortable opinion, especially to us who live in a large city, where the price of fuel, in cold weather, is become a serious article. As the value of a cord of wood is nearly doubled within the last thirty years, we should have had a pleasure in believing that in a short time our winters will require less consumption of firing.

We observe, however, that Mr. Webster is opposed to the current opinion on this subject. He seems to think that people suffer as much at present, under the severity of winter's cold, in Asia, Europe or America, as ever they suffered at any former period. We shall consider this new hypothesis with some attention, because for the reason stated, it is not very palatable, and for a better reason, because we suspect that it is not well founded.

We admit, with Mr. Webster, that it cannot be correct to take any thing that is written in the book of Job concerning the prevalence of frost, hail, or cold, as an argument for or against the common opinion, viz. that there has been a decrease of cold in or near Palestine. For though the writer speaks of a degree of cold that does not at this day prevail in or near that land in which Moses tended the flocks of Jethro, we have no authority for saying that Moses wrote the book of Job. On the contrary, when we consider how many years Job seems to have lived, and how many of his cotemporaries had not at that period fallen into idolatry, we should rather presume that he was cotemporary with Abraham, or lived before him.

The common opinion that respects the decrease of cold in certain countries, is founded upon the assertion of ancient poets and historians, who speak of intense cold, with ice and snow, which formerly prevailed in those countries, compared with the report of modern travellers, who assure us that no such degree of cold prevails at present. Mr. Webster attempts to invalidate this argument, first, by alleging that the poets dealt in hyperboles, or that they took extraordinary cases for common ones. He next opposes the effect of their evidence by showing what, as he conceives, must have been the real state of the climate in those several regions. This appears, as he thinks, by the tender fruits they produced. Now as it is well known, that in all countries there are some uncommon and extraordinary seasons of heat or cold, or of rain, or dry weather, we deem it very unfair to suppose that any poet or historian had fixed upon one of those seasons when he was describing the climate of the country. When Virgil, Horace, Juvenal, and Martial, speak of much snow and ice in the streets of Rome; of cutting the ice in order to bathe in the Tiber, or of the mode of catching eels under the ice in waters on which ice is not found at present, it is hardly fair to pass all this to the account of poetical license, or the account of some uncommonly cold season. On some occasions, however, Mr. Webster treats the evidence with less respect, as in the following case: Mr. Gibbon, in order to prove that the winters were very cold in Germany seventeen hundred years ago, observes, that the Rhine and the Danube used to be covered with ice strong enough to bear loaded waggons. This allegation, indeed, is not absolutely denied by Mr. Webster; but he puts the reader in mind that Cæsar was obliged to build a bridge across the Rhine. True it is that Cæsar built a bridge with much art across the Rhine, but it does not follow that the Rhine could not have been crossed in winter upon the ice. It only follows that Cæsar, as usual, had occasion to march his army in summer rather than in winter.

It is admitted that the ancient Romans wore loose garments in Italy; they had no breeches; but we cannot, from that circumstance, infer, as Mr. Webster does, that the winters in Italy were not cold. We know that the climate in the highlands of Scotland is much colder than it is in the lowlands; but the highlanders do not to this hour wear breeches, except by compulsion.* We shall not dispute that olives, figs and pomgranates were produced three thousand years ago in Palestine, in warm vales, or near the border of the salt lake: but it does not follow that a high degree of cold did not prevail in the winter season, through the greater part of that country. It is known that the reindeer has, some ages ago, retreated from Germany; this has been stated as a proof that the cold has decreased there, but Mr. Webster will not admit that the deer retreated in search of a colder climate, when Germany became warmer. The reindeer retreated, as he alleges, in search of solitude and proper food. When he gave this reason, to account for the deer having changed his country, he should have told us also, if he could, why white bears are not found at present as formerly in Germany, or in Thrace. That quadruped, naturally black, is only white in very cold climates. When he contended that the climate of Germany is not meliorated, it is strange that he should not have respected the positive assertion of Tacitus, who speaks of Germany as "impatiens arborum frugiferum," not fit to produce grapes or other fruit-bearing trees. It is notorious, that the case at present is greatly altered.

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* See a Statute of George IIId.

It has not been alleged, as we suspect, by any historian or philosopher, that there is a general reduction of cold on the face of the whole earth in the winter season. The altitude and operations of the sun, on the several days of the year, are much the same at present as they have been time out of mind. The opinion, as we conceive, that has been adopted by numerous writers, is, that the climate of any country may be affected by cultivating the soil. That more heat is reflected by a smooth cultivated surface than by a forest. They know that Germany, for instance, is much better cultivated at present than it was in the age of Julius Cæsar, and they discover, as they think, proofs innumerable, that the winters in general are now more temperate in Germany than they had formerly been, whence they infer that the climate of a country is mended by cultivation. What improvements have been made upon the temperature of our winters within the last century, we are not prepared to state: but he must be hardy indeed, and very much of a sceptic, who will deny that the temperature of our winters is greatly altered; since we have proof positive, that north-west winds are not half so prevalent now as they were fifty years ago. But as some of our readers may not have observed this general alteration in the course of the winds, we refer them to the very valuable work of Dr. Williamson, entitled, "Observations on the Climate in different parts of America," page 181. On the whole, Mr. Webster has shown much learning and research in the course of his Dissertation; but we are sorry to observe that he attempts to invalidate a general hypothesis by particular exceptions.

II. *A Dissertation on the production of Vapour; in which it is attempted to explain some curious phenomena that attend its ascent. By Elizur Wright, Esq.*

Mr. Wright first notices the general hypotheses that have been invented by philosophers to explain the nature of evaporation; all of which he considers insufficient to show the phenomena which accompany that process. After detailing a number of circumstances which take place upon ice being converted into water, and other changes attendant upon vegetable fermentation and animal putrefaction, he comes to the conclusion, that *evaporation is a dissolution by fire.* Whether or not this definition be correct, or possess any peculiar advantages, we leave to the judgment of our philosophical readers, to whose attention we must refer the paper of Mr. Wright, for a more satisfactory account of it than we are at present able to give.

III. *An Account of the Whitten Plaster.*

This plaster, so called from the name of the discoverer, Thomas Whitten, of Kent, near New-York, in which place it was found, though not manifestly gypseous earth, is ascertained to be an excellent manure, and not inferior to the plaster of Paris in its effects upon indian corn, and in certain soils, upon clover. Though not regularly subjected to any chemical experiment, Mr. Smith, (the author of the communication,) is of opinion, from the slight attempt he made to decompose it, that it contains sulphuric acid, plumbago, and silicious earth.

IV. *Sketch of the Mineralogy of the Town of New-Haven.*

This is one of the most able and satisfactory articles in the present volume; and in every respect worthy of the acknowledged talents of the author, Professor Silliman, of Yale College. Professor S. has considered his subject under two principal divisions, which seem naturally to arise out of the diversity of surface, by which the territory belonging to the town of New-Haven is strongly marked: First, of the plain country; secondly, of the mountainous and hilly country. The mean diameter of the plain country does not exceed two and a half, or at most, three miles; and though it presents little that is interesting to the mineralogist, Professor S. from a number of circumstances is led to conclude, that its formation is *alluvial*. As to the mountainous or hilly part, which encircles the plain of New-Haven, it every where furnishes indications of a very ancient if not a very primitive country. The East Rock is composed of whin stone, trap, or basalt. The same may be said of West Rock, and Pine Rock. From West Rock, in a course westward and southward along the brows of the hills, which are only of a very moderate elevation, frequent masses of granite, whin stone, quartz, and sand stone are to be found; and within a quarter of a mile of the Derby Turnpike, a species of stone presents itself which very soon becomes the predominant stone of the country. In its structure, it is schistose, its laminæ often variously contorted, and frequently striated with laminæ of quartz, and sometimes of mica; so that in many places it may be called micaceous schistus, and from its soapy feel it may be called magnesian schistus. Professor S. further adds,

"Nothing occurs to detain us in passing over the hills which lie between the Derby turnpike, and those heights which overlook

West-Haven, about midway between the Stratford road, and the Sound. Insulated blocks of granite, whin stone, porphyry, and quartz are scattered every where along, but the magnesian schistus is predominant, and from the heights just now mentioned, to where they terminate in the flat ground, adjacent to the shore, we find nothing but immense strata of this *magnesian schistus*, rising every where to view, and discovering, whenever the road, a water channel, or a side-hill gives a view of the strata, an unvarying inclination to the west and north, forming an angle of perhaps 35° with the horizon.

In some instances this schistus is sprinkled with beautiful spangles of golden coloured mica, which are very brilliant in the sun." p. 95, 96.

v. *Number of Deaths in the Episcopal Church in New-York, in each month, for ten years, from January* 1, 1786, *to December* 31, 1795, *taken from the sexton's books, and communicated by N. Webster, Esq.*

We make the following extract from this paper :

" Of one hundred persons who die in New-York, according to this bill of mortality for ten years, there die of

Two years old and under,	43
Between 2 and 5,	5 1-10
5 and 10,	3 6-10
10 and 20,	3 1-10
20 and 30,	7 1-10
30 and 40,	8 5-10
40 and 50,	13 3-10
50 and 60,	7
60 and 70,	3 9-10
70 and 80,	2 5-10
80 and 90,	1 3-10

One to 211 dies between 90 and 100.

One to 1686 dies above 100."

VI. *An Account of the American Cantharis, or Meloe Americæ; By Doctor Nathaniel Dwight, of New-London.*

Some account of this species of the Meloe was given by Doctor Chapman, of Philadelphia, several years ago. Dr. Dwight's observations and experience are in confirmation of what Dr. Chapman at that time made known; and from their united labours, we cannot but believe that the black potatoe bug, as it is called, will be found a certain and advantageous application in those cases in which the Spanish fly is employed.

VII. *A Calculation of the Orbit of the Comet which lately appeared; together with some general observations on Comets. By Col. Jared Mansfield, Surveyor General of the United States.*

In this paper Col. Mansfield gives us the result of his observations and calculations respecting the comet which appeared in September, October, and November, 1807. He has not furnished us with the observations themselves, nor yet with the calculation of the orbit. He has also neglected to inform us to what meridian his time refers, unless we are to suppose it that of Cincinnati, in which place he has dated his paper.

He has, however, been very successful in this difficult research, as will appear by the following comparison of his results with those of Bowditch, Ferrer, and Burckhardt:

1. *According to Mansfield.*

Place of the ascending node, - -	8s	27°	08′
Place of the perihelion, - - -	8	28	48
Inclination of its orbit to the ecliptic, -		63	09
Perihelion distance, that of the earth from the sun, being 1, - - - -	.64480		

Time of being in the perihelion, September 10th, - - - - - 12h. 40m. P. M.

Time of its being in the ascending node, September 17th, - - - - 3h. P. M.

Motion of the comet direct.

2. *According to Bowditch.*

Perihelion distance, - - - 0.64962

The mean distance of the earth from the sun being denoted by unity.

Time of passing the perihelion, September 18.60766

Or Sept. 18d. 14h. 35′ 2″ mean time at Salem, corresponding to Sept. 18d. 19h. 18′ 34″, mean time at Greenwich.

Longitude of the ascending node, - *8s* 26° 25′ 3″

Place of the perihelion counted on the orbit of the comet, - - - 9 0 59 55

Inclination of the orbit to the ecliptic, 63 9 57

Motion direct.

3. *According to Ferrer.*

Greenwich time of passing the perihelion, Sept. - - - 18d. 18h. 6m. 48s.

Longitude of the ascending node, - 8s 26° 42′ 13″

Place of the perihelion, - - - 9 0 51 35

Inclination of the orbit to the ecliptic 63 12 51

Perihelion distance, (earth being 1,) - .646,3667

4. *According to M. Burckhardt.*

Time at Paris of passing the perihelion, Sept. - - - 19d. 10h. 33m. 36*s*. A. M.

Perihelion distance, (earth's distance 1.) .64879

Longitude of the perihelion, - 9*s*. 1° 19′ 25

Longitude of the ascending node, 8. 26 33 5

Inclination of its orbit, - - - 63° 5′ 15″

Motion direct.

Mr. Olbers, of Bremen, thinks that this comet revolves in a very eccentric ellipse, and has a periodic time of 1900 years.

VIII. *Of the Figure of the Earth.* *By Col. James Mansfield.*

In this paper the principal object of the author was to show that mathematicians had determined the true figure of the earth from the measures of certain degrees of the meridian, and to confute those who imagined that because the degrees of the meridian have been found to increase in approaching the poles, therefore the axis of the earth must be greater than its equatorial diameter.

After several remarks, which may be read with advantage, by such as wish to form a true judgment of the figure of the earth, without the necessity of laborious researches in algebra or geometry, the author proceeds to Maupertuis' problem of determining the figure of the earth from the measures of two degrees of the meridian in known latitudes.

This useful problem has been solved by several mathematicians, as Maupertuis, Jones, Martin, Maclaurin, Simpson, Emerson, and many others.

Mr. Mansfield states the problem in these words;

" *The measure of a degree, in two known latitudes of the meridian, being given, to determine from thence the figure of the earth.*"

He then commences his solution as follows:

" From physical and other principles, it is known that the earth, if not a sphere, must be a solid generated by the revolution of an ellipsis about one or other of its axes."

It has never been demonstrated that the earth *must* be a spheroid; on the contrary, the ablest mathematicians have doubted or denied its spheroidal form.

Emerson considers this subject at some length in his Geography, pages 31, 32, 33. In page 33, he says, "But if the earth be an irregular solid, no measures can ever conspire to make it regular, and what ground have we to think it regular? The internal parts of it are unknown to us. It may happen to be denser towards the poles, or it may happen to be denser towards the equator. But these two different suppositions will cause different figures. And as the internal constitution of the earth is unknown to us, the true form of it will always remain a secret, though it cannot be far from that of a spheroid,"

Bossut, in his History of Mathematics, Period iv. Chap. xiii. Sec. i. discusses this question with attention, and gives the arguments on both sides. Having stated the reasonings of those who maintained that *the earth was not a solid of revolution,* he introduces what may be said in favour of the ellipsoïdal form, in these terms:

"To those arguments are opposed others which destroy their effect; and, if they be not absolutely conclusive, are at least sufficient to connect assertions too affirmative into simple doubts."

La Place, in the XIIth Chapter of the 1st Book of his Exposition Systeme du Monde: "Il y a même, lieu de croire quelle n'est pas un solide de revolution."

In the same page this most admirable geometer delivers his sentiments as follows:

"La mesure de deux degrés dans le sens du méridien suffit pour déterminer les deux axes de l'ellipse generatrice, et par consequent, la figure de la terre supposée elliptique. Si cette HYPOTHESE est celle de la nature, on doit trouver à peu près le même rapport entre ces axes, en comparant, deux à deux, les degrés de France, du nord, et de l'équateur ; mais leur comparaison donne à cette égard, des différences qu'il est difficile d'attribuer aux seules erreurs des observations."

The elliptic figure of the meridian being, as it should seem, *not quite certain*, we must be content with *assuming* such a figure as the basis of the subsequent investigation. In a word, many problems involving only small portions of the surface of the earth, as in common surveying, permit us to *assume* the surface of the earth as a plane, because we perceive clearly that such errors as arise from the general curvature will not be of any importance. But in problems where large portions of the surface of the earth are considered, as in geography and navigation, the general curvature must be attended to ; and in order to do this the simplest supposition possible is made, viz. that the earth's surface is spherical, and such a radius is chosen as seems to result in the most probable manner from the best known measures of meridional degrees : but if yet greater accuracy be necessary, we *assume* the simplest figure possible that nearly agrees with a sphere, so as to make some allowance for the inequality of general curvatures, that is, we *assume* the figure of the earth to be that of a spheroid, and find such a spheroid as seems to be the most probable result of the best admeasurements of meridional arcs.

Having thus made a transition from the regions of philosophy to those of pure geometry and analysis, Mr. Mansfield proceeds to investigate, algebraically, the ratio of the axes in the assumed spheroid. From an imperfect statement of the sense in which some of his algebraic characters are to be understood, he will probably perplex his less experienced readers. He says, "and put the *ratio* of C P to C E, that of p to q ;" (by C P and C E, he means the semi axis and equitorial semidiameter,) but he in fact uses p and q for the *true valves* of C P and C E.

He concludes his algebraic process with leaving to the analyst his final equation, from which $\frac{p}{q}$ may be found without applying his formulæ to an example. He, however, does not take notice of the discordancy among the various measures which have been taken of arcs of the meridian on the elliptic hypothesis; yet, it is in determining the most probable ellipticity, from several measures of good authority, that the most valuable problem respecting the figure of the earth seems to consist.

IX. *Observations on the Duplication of the Cube, and the Trisection of an Angle. By Col. Jared Mansfield, Surveyor General of the United States.*

It seems that James Winthrop, Esq. has attempted *to double the cube*, or, which amounts to the same thing, has attempted to insert two mean proportionals between two given extremes. In this attempt he has failed, as might have been expected; and the object of Mr. Mansfield, in the present paper, is to point out the error of Mr. Winthrop's construction.

In this point Mr. Mansfield has completely succeeded: he shows us the precise point of the argument in which the demonstration is faulty; and, besides, proves that the proposed method of Mr. Winthrop does not accomplish the end proposed.

In this paper Mr. Mansfield observes:

"A solution, however, by the strict principles of geometry, is not so easily effected, and by no means do I apprehend that any propositions of Euclid, or of a right line and circle, are sufficient for this purpose."

Mr. Mansfield is, no doubt, correct in maintaining that the duplication of the cube cannot be effected by common geometry; that is, by the description of right lines and circles, on a plane, or even on different planes; but most readers will be very desirous of knowing the reasons that can be given for adopting this sentiment; and we think Mr. Mansfield would have rendered his paper much more interesting, as well as useful, had he employed a part of it in showing the impracticability of the thing proposed. A satisfactory discussion of this subject would require more room than could be allotted to it in this place, otherwise we should have attempted to show the impossibility of *doubling the cube geometrically*.

Mr. Mansfield also remarks, that, "Mr. Winthrop appears to be the *only* person who has ever attempted its solution by right lines, or merely by the principles of common geometry."

On this point we shall quote the judicious mathematician Bossut. See his History of Mathematics, Part 1, Chap. 2.

Speaking of Plato, he observes, "The problem of doubling the cube could not fail of engaging his attention. Having attempted in vain to solve it by rule and compasses, he invented, for the purpose of finding the two mean proportionals, an instrument composed of two rules, one of which moved in the grooves of two arms, at right angles with the other, so as always to continue parallel with it."

And in the same chapter, he adds, "Most of the ancient geometricians were so possessed with the hope of resolving these problems by means of the rule and compasses, that they could not bring themselves to give it up. They made many fruitless attempts; and this eagerness became a kind of epidemic disease, which has been transmitted from age to age down to the present day. But it must find an end; and in fact, it was relinquished by those who kept pace with the progress of mathematics, when, in modern days, algebra began to be applied to geometry. At present the disease is incurable in those who attack these questions with the weapons of the ancients; for as they are ignorant of the present state of the sciences, there are no means of curing them."

x. *A statement of the quantity of rain which falls, on different days of the Moon. By Jeremiah Day, Professor of Mathematics and Natural Philosophy in Yale College.*

The observations of Professor Day were continued for a time somewhat short of four years. They furnish the following conclusions: that the quantities of rain which fell at New-Haven during the years 1804, 5, 6, and 7, varied at different periods of the moon: that the least portion fell at the new moon, and the greatest at the quarters.

xi. *Description of an Air Pump, invented by Elizur Wright, Esq. Feb.* 1803.

The description which Mr. Wright has here given of his newly invented air pump is very concise; but without the accompanying engraving it is impossible to convey an accurate idea of it to the reader.

xii. *A brief account of a Trial at Law, in which the influence of water, raised by a mill dam, on the health of the inhabitants in the neighbourhood, was considered. By the Hon. David Daggett, Esq.*

How far the subject of the present article may be considered a branch of legal medicine, and thus lay claim to our attention, we will not undertake to say; how far it is characterized by any novel reasoning on abstract matters of law, or what new principle in jurisprudence it establishes, are questions for the discussion of other judges than ourselves. We cannot however but think, that it would have afforded a much better and more appropriate case for the Connecticut Reports, than for the Connecticut Academy of Arts and Sciences.

XIII. *On the Decomposition of White Lead Paint.*

This is another article from the fertile pen of Noah Webster, Esq. It is well known that white paint upon exposure to the atmosphere undergoes certain changes; that the oil becomes separated from the lead, and that the latter may be rubbed off with the hand. It is equally well known that this circumstance does not occur when paint is not exposed to water. "From these facts, says Mr. W. it is probable that the oil, when exposed to water, undergoes a slow decomposition."

"Oil is proved, by chemical analysis, to be composed of carbon, or pure charcoal, and hydrogene, or the base of inflammable air, in the proportion of nearly four parts of the former, with one of the latter. Now, carbon has a very strong affinity for oxygene, one of the constituent elements of water. Is it not probable that the decomposition of the oil of paints is owing to that affinity—the carbon of the oil combining with the oxygene of water, and the hydrogene of the oil, being set free, escaping in the form of gas? If so, the art of rendering the paint durable will consist in fixing the oil, or preventing this decomposition. This is undoubtedly a great desideratum in the arts." p. 136.

XIV. *An observation on the Auroral appearance in the evening of the first day of August,* 1783, *at Durham. By the late Rev. Elizur Goodrich, D. D.*

Dr. Goodrich has very minutely related a number of circumstances which occurred during the appearance of this meteorological phenomenon.

xv. *An account of the Meteor which burst over Weston, in Connecticut, in December,* 1807, *and of the falling of Stone on that occasion. By Professors Silliman and Kingsley. With a chemical analysis of the Stones, by Professor Silliman.*

This very able and interesting account of Professor Silliman and Kingsley having been already widely circulated through the medium of our public journals and philosophical transactions, we shall forbear to give any analysis of it, or make any extracts. It is proper to state, that the communication is here corrected throughout and greatly enlarged since its first appearance. The chemical analysis made by Professor Silliman, bears the strongest evidence of discriminating accuracy, and will be again and again recurred to by the practical philosopher and chemist with unabated satisfaction.

xvi. *A view of the Theories which have been proposed, to explain the origin of Meteoric Stones. By Jeremiah Day, Professor, &c.*

The author of this memoir first takes particular notice of three different hypotheses which have been offered relative to the nature of meteoric stones: that they are formed from materials raised into the air in the state of exhalations or gases; that they are masses of matter thrown from volcanoes; that they descend from the moon. We have not room for the arguments with which he combats these several theories. In the opinion of the Professor, they contain insuperable difficulties. But though Professor Day, upon good grounds, has thus entered his protest against the speculations entertained by some of his predecessors, on a subject enveloped in much obscurity, he cannot exclusively lay claim to the merit of having suggested a new theory of his own. The "Conjectures on Meteors," offered by the late President Clap, of New-Haven College, went to give currency to the idea of terrestrial comets, and this again lead to the supposition that meteoric stones are of terrestrial origin. To support this opinion is the object of Professor Day's communication. We shall make a quotation from his ingenious paper.

"There is one other hypothesis, which, though not entirely without difficulties, appears to be encumbered with fewer than any other, which has been offered to the public. Among the manuscripts of the Rev. Thomas Clap, formerly President of Yale College, was found a paper, containing "Conjectures on the nature and motion of Meteors." This was published some years after his death. It is thought, that the theory of "Terrestrial Comets," which it proposes, may be so modified, as to suit the case of atmospheric stones.

"The solar comets, it is well known, revolve round the sun, in very eccentric orbits. In one part of their revolution, they sometimes come so near as almost to strike his body. They then move off, far beyond the orbits of all the planets; and, in some instances, are gone hundreds of years, before they return. President Clap supposes, that the earth is furnished with its system of comets, as well as the sun—that their size, and the period of their revolutions, are proportioned to the comparative smallness of the primary body, about which they revolve—that, like the solar comet, they fly off, in very elliptical orbits; and, during the greatest part of their circuit, are too far distant to be visible—that, in their approach to the earth they fall within our atmosphere—that, by the friction of the air, they are heated, and highly electrified—that the electricity is discharged with a very violent report—that they then move off in their orbits, and by their great velocity, are soon carried out of our sight.

"It does not appear, that the learned author of this theory was apprized of the fact, that substances frequently fall from these bodies to the ground. But the scheme requires very little alteration, to accommodate it to this circumstance. We have only to suppose, that at the time of the explosion, pieces are broken off from the surface of the meteor; and that these fall to the earth, while the main body moves on in its orbit.

" The hypothesis, if admitted, will account for most of the phenomena attending the fall of atmospheric stones. The *velocity* of the meteor corresponds with the motion of a terrestrial comet, passing through the atmosphere in an elliptical orbit. A body moving near the earth, with a velocity less than three hundred miles in a minute, must fall to its surface by the power of gravitation. If it move in a direction parallel to the horizon, more than four hundred and thirty miles in a minute, it will fly off in the curve of an hyperbola ; and will never return, unless disturbed in its motion by some other body besides the earth. Within these two limits of eight hundred miles on the one hand, and of four hundred and thirty on the other, (some allowance being made for the resistance of the air, and the motion of the earth,) the body will revolve in an ellipsis, returning in regular periods. Now, the velocity of the meteors, which have been observed, has generally been estimated to be rather more than three hundred miles in a minute. In some instances, it is perhaps too great, to suffer the body ever to return. But, in most cases, it is calculated to be such as would be necessary, in describing the lower part of an elliptical orbit.

The *direction* of the motion also, agrees with that of a revolving body; but not at all with that of a mass of matter, accumulated in the atmosphere, and falling, by its weight, to the earth. The *dimensions* of these meteors too, are such, as to indicate that they move in orbits of their own ; as they are manifestly too large to be formed in the air, by an accumulation of gases, or to be thrown from a volcano or the moon. They appear to have about the same proportion to their central body, the earth, as the little planets lately discovered between the orbits of Mars and Jupiter, have to the sun, about which they revolve.

" The theory last stated, though in the main adapted to the purposes for which it was proposed, yet, it must be acknowledged, is not entirely satisfactory, in the explanation of one or two particulars. II. It assigns a reason for the ignition and explosion of the meteor, which is not perhaps fully warranted by any observations and experiments hitherto made. The stones, when they fall to the ground, are found to be hot. The body of the meteor itself, has the appearance of fire. It is undoubtedly in a state of ignition, at least at the surface. Whence is this powerful heat derived? President Clap supposes it is produced by the friction of the air—that the body, moving with great rapidity through the atmosphere, is both heated and electrified—and that, when it is nearest the earth, the electricity is discharged, with an explosion, as much greater than thunder, as the meteor is farther distant, than the common region of the clouds. It is well known, that *hard* substances may be electrified, and even set on fire, by rubbing them together. But farther proof is wanted, to make evident, that a body may be made red hot, by the mere friction of the air; especially of air, as greatly rarefied, as it must be in that part of the atmosphere where the meteors move.*

" There is another circumstance, which is left unexplained by this theory. In a few instances, particularly that in Sienna, the falling of stones is said to have been accompanied, or preceded, by an apparent burning of the clouds. If this is any thing more than an optical deception, it seems to indicate a collection of combustible materials in the air. This appearance of fire in the heavens has been too long before the falling of the stones, to be the *effect* of the passage of the meteor through the atmosphere.

" With the exception of these two difficulties, neither of which ought perhaps to be considered as insuperable, the theory which refers the origin of the meteoric stones to terrestial comets, appears to be embarrassed with fewer objections, than any of the others which have now been mentioned. None of them, however, can claim to be considered as any thing more than theories. They are not yet supported by direct and positive proof. The subject is involved in too much obscurity, to admit of a complete elucidation at once. The inquiry has commenced, with a number of suggestions, which *may* be true; but which must be left, to be confirmed or refuted by subsequent observations. This is, not unfrequently, the course which scientific investigations must of necessity take. The first step towards an important discovery, is often an ingenious conjecture. This gives the lead to a train of inquiries, which finally succeeds in unfolding the true principles of the subject. It must be granted, that but little progress has as yet been made, in explaining the origin, nature, and use of the bodies, from which the atmospheric stones proceed. But the facts that have been collected, have awakened curiosity. The approach of these meteors, will hereafter be noticed, with uncommon interest. Observations of their motion will probably be made with as much accuracy as the opportunities, furnished by their sudden and unexpected appearance, will admit. But whether the mysteries of the subject will be unveiled, upon a farther investigation, time must determine." p. 171—174.

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* *Note.*--Since the discovery of Mr. Davy, that the earths are metallic oxids; it has been suggested, that the basis of magnesia and silex may originally exist in the meteor, in the state of *pure metal:* and that when the body comes from some distant region of the heavens, into our atmosphere, a sudden and violent combustion is produced by the very strong affinity of these substances to oxygen.

XVII. *Origin of Mythology, by Noah Webster, Jun. Esq.*

On this subject we have only to observe, that Mr. Webster has shown much learning and extensive reading. It is a species of learning in which he is perfectly at home, being a professed philologist. To discover the origin of the host of heathen deities that have been worshipped in different regions; to find how many names the same deity had in different countries, or how many of them were different personages; to find how many of them had been men or women, and eventually deified and worshipped, and how many had been nothing else than certain virtues or qualities personified, is confessedly a herculean task. It is a field in which a man may travel without opposition, for in many cases he deals in pure conjecture. When we speak of conjectures, we refer to a kind of learning to which some of our readers may not have paid much attention. It is the attempt to discover the origin of names and words, or the true root from which they sprung. Thus *pugno*, in Latin, signifies to fight with any weapon, and it is obviously derived from *pugnus*, a fist; because men originally contended with their fists. But in the Ethiopian dialect, *ber* signifies silver, and *bert* signifies iron, which is also a bright metal. From these words, as we are told, the Latin words, fortitudo and virtus are derived. In this case, as the reader observes, the resemblance between the word and its root is not so conspicuous, though it contains two of the same letters. Other cases occur in which the derivative and its root have less resemblance to one another. Let us try another sample of conjectures:

Bacchus, an imaginary being. The name is from the Celtic word *bach*, drunk, with the addition of the Greek article *us*. In Irish, *bach* is drunk, *bacchaire* a drunkard, and *balcha*, the root of the Latin *poculum* a cup. Bacchus then is nothing else than intoxication personified, and in process of time, made a deity. Bochart, however, forms the name from *barchus*, the son of Cush, and supposes him to have been Nimrod. If the reader dislikes both of those origins of the name, he may find two or three more. From this, however, he may infer, that mythology has no great affinity with mathematical demonstration.

Art. II. Observations *on* Hydrophobia, *produced by the Bite of a Mad Dog, or other Rabid Animal; with an examination of the various Theories and Methods of cure, existing at the present day, and an Inquiry into the Merit of specific Remedies. Also a Method of Treatment best adapted to the Brute creation. In a series of Letters, addressed to a Friend. By* James Thacher, M. D. *Fellow of the American Academy of Arts and Sciences, and of the Massachusetts Medical Society, and honorary Member of the Georgia Medical Society.* Plymouth, (Mass.) J. Avery. 8vo. pp. 301. 1812.

Though the present volume does not aspire exclusively to the character of an original work, it cannot but be considered as a very respectable and useful publication. It contains a large selection of facts on a very interesting subject, judiciously made, and arranged with considerable perspicuity: and among the facts and observations of the most distinguished writers, both European and American, which are here brought forward on the nature of hydrophobia, Dr. Thacher has interspersed many just and appropriate remarks of his own, all of which are calculated to throw light on the character of this distressing and too frequently fatal disease. Did our limits permit, we should find no difficulty in presenting our readers with several extracts from different parts of the volume, which would be perused with much satisfaction and great practical advantage. We have only room for the following extract from his observations on those remedies which are intended to counteract, or overcome the effects of hydrophobia after the disease has actually appeared:

"Among the mineral preparations, those of zinc and copper have been proposed, as well adapted to the cure of the present disease.

The cuprum ammoniacum, in doses of two grains, conjoined with opium, was given to a child of eight years of age, without effect. I should, nevertheless, repose considerable confidence in the powers of copper judiciously directed. This with calomel was the active material in the remedy of Mr. Crous, and, according to his statement on oath, his usual quantity was one scruple of verdigris, and when hydrophobia has come on, he directs one hundred and eighty *grains of the same medicine, mixed with half an ounce of calomel, for one dose.* It is not from the authority of Mr. Crous, but from the very active properties which copper is known to possess, and from its successful employment in epilepsy, chorea, and many other diseases of the nervous system, that I am solicitous to witness its effects on the constitution while labouring under the distressing symptoms from canine poison. Some embarrassment would probably be experienced on account of the precise dose, but that must be determined by the effects and other circumstances. Dr. Mease appears sanguine in his opinion that this disease may be cured by means of a *strangury*, excited by the internal exhibition of *cantharides.* The principle, he observes, of the animal economy, first unfolded by J. Hunter, of one irritation curing another, is daily and amply confirmed in practice, and its application in the present disease seems highly probable. In confirmation of this sentiment, Dr. Mease brings into view the history of a desperate case of tetanus, in which a cure was happily effected by the use of cantharides. The case is related, (Med. Repos. vol. 4. p. 337.) by Dr. S. Brown of Lexington, Kentucky, of a lady who was attacked with tetanus from a wound in her heel, and after various appropriate remedies had failed to afford relief, Dr. Brown exhibited fifteen drops of tincture of cantharides every hour, until one and a half drachm was taken, when it excited such a degree of inflammation in the stomach and bowels, and a slight strangury, as to forbid any further use of the medicine. The happiest effects, however, resulted from this bold practice: every symptom of tetanus and spasm immediately yielded to the new disease thus created, and no recurrence of them was afterwards experienced. From the striking analogy of the two diseases, we are advised by Dr. Mease to adopt a similar practice in hydrophobia. In order to give the tincture of cantharides a faithful and decided experiment, it should be exhibited speedily, largely, and repeated often, and uncombined with any thing but the vehicle in which it is taken. Nor should any other medicine be administered to interrupt or modify its action, until the course of the experiment is completed. The most vigilant attention will be requisite to ascertain the effect, and as soon as symptoms of inflammation of the alimentary canal or the bladder become manifest, the intention is thus far accomplished, and the medicine should be discontinued. Mucilaginous and diluting drinks, with oily clysters, and a proper quantity of laudanum must now be exhibited, and these, with the warm bath, will probably soon procure the desired relief." p. 275—277.

ART. III. OBSERVATIONS *on the* CLIMATE *in different parts of* AMERICA, *compared with the Climate in corresponding Parts of the other Continent. To which are added, Remarks on the different Complexions of the Human Race; with some Account of the Aborigines of America: being an Introductory Discourse to the History of North America. By* HUGH WILLIAMSON, M. D. LL. D. *Member of the Holland Society of Sciences, of the Society of Arts and Sciences of Utrecht, of the American Philosophical Society, &c.* New-York. T. & J. Swords. 8vo; pp. 199. 1811.

THE author of this work has occupied a distinguished rank in the councils of his country. He was a member of Congress, from the state of North Carolina, under the former and the present federal compact. He represented that state in the celebrated convention which framed the present constitution of the United States. Some years ago he retired from public life, and has resided in the vicinity of this city, devoting himself to the cause of science and to the welfare of his family, and attracting universal esteem and respect by the amiable simplicity of his manners, the exemplary purity of his life, and the highly cultivated state of his mind. During the momentous scenes of the revolution, and the subsequent interesting political events, in which he was a distinguished actor, it appears that he never lost sight of the interests of science, and that he availed himself of every interval of official abstraction, to cherish his attachment to literary studies. The fruits of this laudable devotion have appeared on various other occasions besides in the work of which we are now about to speak.

We are sorry to remark, that with a few honourable exceptions, the literary men of Europe have conspired to destroy the character of America. The writers who have embarked in this reprehensible undertaking, may be divided into two classes.—1st. Those who have misrepresented America without any particular reference to her European population, as a world lately risen from the ocean; as a country, in which the frigid temperature of the atmosphere seems to be impressed upon its animal productions; as a country, in which some vice of the climate, or some combination of elements, prevents the expansion of animated nature, and causes man and beast to degenerate; and as a country, for which a new and inferior race of men has been created.—And, 2dly. Those who have undertaken to describe her under the cultivation of the man of Europe; as a country whose institutions, political, rural, and literary, and whose inhabitants, considered in relation to their morals, their minds, or their manners, are greatly behind those who occupy the European world. The first class appear in the solemn garb of philosophy. The second have sprung up, like mushrooms, since the American revolution, and are principally composed of superficial travellers, who have inundated the printing presses and libraries of

Europe with their contemptible effusions. Among the leaders of the first description may be found the highly respected names of Buffon and Robertson. The second is a motley group,

> Ambubaiarum collegia, pharmacopolæ,
> Mendici, mimæ, balatrones ; hoc genus omne.

If, as is insinuated, America is the last work of exhausted nature, and was called into being after she had finished her labours in the eastern hemisphere, it must be admitted that she put forth all her strength and exerted all her skill in this grand operation. America constitutes the sublime of creation. Her rivers, her mountains, her lakes, and her vegetable productions are formed on a more magnificent scale than those of the ancient world. The five great lakes ; the river of the Amazons, and the mountains of the Andes, surpass all competition. Is America then deficient in her animal productions, and in her climate ? We answer confidently, No ; and we feel fortified in our opinion from a perusal of the able and learned volume before us.

Whatever diversity of opinion may exist with regard to Mr. Jefferson, in other respects, it must be universally admitted, that as a literary character, he is highly respectable. And he has derived no small share of his fame, from entering the list against the calumnies of Buffon, who has boldly asserted, that in the new world, " La nature vivante est beaucoup moins agissante, beaucoup moins forte," that nature is less active, less energetic here than in the old world, and this great defect is ascribed to the vices of the climate. Mr. Jefferson has successfully refuted the doctrines of Buffon, with respect to the comparative size and number of animals, and the degeneration which was imputed to animal life in the new world. Dr. Williamson has occupied the same but more elevated and extensive ground. He has ascended to the fountain head of the calumny, and has fully vindicated, not only the animal productions, but the climate of America. The importance of this discussion must be obvious to the most superficial thinker. Who would willingly entail upon his offspring an hereditary disease, the consumption, the king's evil, or insanity? Who does not cautiously avoid a matrimonial connexion that would promise such inauspicious consequences? And what is the difference between a deleterious and debasing quality attached to the former, and one connected with the country? If the human character is degraded under the pernicious operation of the climate, and man is robbed of his faculties and depreciated in his endowments, it is a duty we owe to the interests of our posterity, and to the exaltation of our species, to retire from the place of degradation, and to seek a climate and a soil more congenial and more fostering. And as the learned writer justly observes, "Whatever our situation, whatever our connexions may be in life; whether we are patriots or parents, we cannot fail to interest ourselves greatly in the fortunes of those who may come after us. And if it should appear that the supposed vices of our soil and climate do not exist; if it should appear that America is at least equal to any other part of the world, we many conclude, without hesitation, that it must be our fault, or the fault of our descendants, if they should sink below their ancestors in virtue, or any desirable quality of body or mind."

The author commences his observations on our climate in the following manner:

"The character of the American climate has chiefly been taken from observations made in the colonies, that are now the United States; for few observations on the climate have been made, in those extensive provinces which are under the dominion of Spain or

Portugal. That we may form a better estimate of the climate, in different parts of this great continent, it will be proper for us to consider the parts that are best known, and compare the present state of the climate in those parts, with observations that were made fifty or sixty years ago. If it shall appear that the climate in the United States of America is materially altered in the memory of man, it will then be proper to consider what has been the cause of that alteration; whether that cause is capable of producing great effects, and how long it may be expected to operate. It will also be proper to inquire, what was the prevailing temperature of the climate, in different parts of the old continent, above two thousand years ago, before it had been cultivated as at present. When we have finished this review, we shall be prepared to determine, whether there be any essential frigidity in the American atmosphere." p. 2, 3.

He then proceeds to consider the prevailing winds.

"There are few places, in the habitable world, where we should expect to find such a prevalence of north-west winds, as in the United States of America, near the Atlantic Ocean. Our coast is washed by the Gulf stream; and the waters of that stream, lately heated between the tropics, are warmer by fifteen or twenty degrees than the waters through which they pass, in their progress to the north-eastward. The incumbent air, being heated by this warm water, passes off, and the colder air from the northward, occupies its place. There is a great ridge, or sundry ridges of mountains, on the opposite side of the Atlantic States, that run nearly in a north-east direction, parallel to the Gulf stream. The air upon those mountains, as upon every other mountain, is cold. The direct course from the Apalachian mountains to the Gulf stream, is nearly south-east. Here then we find a particular cause for the prevalence of westerly winds, or rather of north-westerly winds, in some parts of the United States, in addition to the general cause before mentioned. The air to the south-eastward is heated by the Gulf stream; it is cooled to the north-westward by the mountains;

and the intermediate surface, while it is covered by trees, can have little effect in warming the atmosphere. It is doubtless understood, that in every contest between cold and warm air, that which is cold, being heaviest, always prevails. As the north-west winds, considering their origin, are supposed to be cold, we should expect, during the winter, a greater degree of cold near the eastern coast of the United States, than is commonly felt in corresponding latitudes in other countries. But the character of America is not to be taken from this particular tract; neither are we to believe that the superior degree of cold, in this very tract, will be permanent. It is well known, that in the Atlantic States, the cold of our winters is greatly moderated. As the surface of the country is cleared, a greater quantity of heat is reflected; the air becomes warmer, and the north-west winds are checked in their progress. It is generally admitted, that in Massachusetts and New-Hampshire, the quantity of snow that fell, during the winter, fifty years ago, was more than double of what has fallen, in any winter, for several years past. The river Delaware, in the latitude of forty degrees, used to be frozen by the middle of November; but of late it has seldom been frozen before Christmas; and there are winters in which it is never frozen across. As the westerly winds decrease, the easterly winds prevail. They have become more frequent, and they extend to a greater distance across the country than formerly. The face of cultivated lands, in the summer season, is frequently warmer than the surface of the ocean, in the same latitude; hence it is that easterly winds are observed to increase. It is well known, that ships from Europe make their passage now in less time, by one third, than they required about fifty years ago; for the north-westerly winds, that formerly prevailed on the coast, frequently kept off the shipping for several weeks. They are now favoured by easterly winds, which have increased so much of late, that they are like to be our prevailing winds during the summer, in the Atlantic States—a circumstance that must increase the moisture of our atmosphere, and will be very acceptable to the husbandman.* I am aware that the cause I have stated, for the former intensity of the north-west winds, is contrary to the received opinion. It is commonly alleged, that we are indebted to the great lakes for the coldest of those winds; an opinion that is not supported by any principles of philosophy. The lakes, in general, do not freeze during the winter; hence it follows, that the water in those lakes, being temperate, would moderate the severity of cold winds, rather than increase it. We know that winds from the ocean, or from any great body of water that does not contain islands of ice, are seldom very cold. According to this observation, it is found that the north-west winds, between the great lakes and the mountains, are not so cold as they are between those mountains and the Atlantic Ocean, in the same degree of latitude. It is not alleged that a current of air never crosses the Apalachian mountains, but the few currents that pass can never be strong, considering the height of the mountains.* If the north-west winds came to us from the other side of the mountains, there is little reason why we should not have them as frequent as formerly, nor why they should be of shorter continuance. But it is known that they are much less frequent than formerly, and that their usual continuance is much shorter. One of the severest north-westers I ever felt was at sea, about the thirty-ninth degree of latitude, a few miles from the coast. It demolished every fence that was near the shore; but the severity of the

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* It is a remarkable circumstance, that though we have near twice as much rain in the United States of America as falls, at a medium, in most parts of Eu-

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rope, we suffer occasionally by drought. Our westerly winds are exceedingly dry; but these winds prevail in summer, and in a short time carry off the moisture, so that frequent showers are necessary to the production of good crops. When easterly winds shall prevail, there will be much less occasion for rain, because the moist atmosphere, from the surface of the ocean, will not speedily dry the soil.

* The general height of the Apalachian mountains is found to be near eleven hundred yards. In some parts they rise three quarters of a mile above the common surface of the earth, but in many places they do not exceed half a mile. I was informed by a correct observer, that near the river Holsten, in the state of Tennessee, he saw clouds from the eastward, that seemed to have crossed the mountains, then in sight. He was surprized at the circumstance, and one of the oldest settlers, who chanced to be present, assured him that he had never seen the like before. They presumed that there must be a severe storm on the coast of Carolina; and such was the case, as he afterwards discovered.

wind was not remarkable at the distance of forty miles inland. It was certainly caused by the difference of temperature between the air above the Gulf stream, and the air above the coast that was covered with snow.

"We are not to conclude from observations made in the Atlantic States, that the winter's cold in America is generally greater than the degree of cold that prevails on the other continent, in like circumstances. We have seen the reason why westerly winds should prevail, in high latitudes, and we have shown that they do thus prevail. If those winds come from mountains or high lands, they must be cold; if they come from the sea, they must be temperate. On the western coast of America, near the Pacific Ocean, the winters are temperate and short; the position of land and sea in those regions, being the reverse of the position upon the Atlantic coast. The westerly winds on that side of the continent, come from the ocean. But upon the continent of Asia, opposite to America, the winters, in the same latitude, are much more severe. The rivers freeze in China, in the latitude of Rome; for their westerly winds come from a high uncultivated tract of land. Nor is it probable that Pekin, which is nearly in the latitude of Philadelphia, will ever be relieved from the chilling effects of north-westerly winds: for the rude inhabitants of Tartary have little disposition to cultivate the soil. Captain Cook, the celebrated navigator, observed that vegetation at Nootka Sound, in the latitude of forty-nine degrees, was in great forwardness in April. Captain Magee, of Boston, who passed a winter at Nootka Sound, informed the writer, that he saw little snow in that region. The spring appeared on the coast, as he alleged, about thirty days sooner than it appears in Massachusetts. We are also told by Meares, in his voyages from China to the north-west coast of America, that "the western side of America is a mild and moderate climate;" that "the winters generally set in with hard gales from the south-east." There is seldom any frost on the coast till January, "when it is so slight as rarely to prevent the inhabitants from navigating the Sound in their canoes."

"On the western side of the Apalachian mountain, where cultivation is hardly begun, the winters are much more temperate than near the Atlantic Ocean. This difference is attested by numerous settlers; and it has been observed that paroquets winter on the river Scito, in latitude thirty-nine. But I have not heard of their wintering in any part of the Atlantic States, to the northward of thirty-six; viz. in the Great Dismal of Tyrrel county, in North-Carolina." p. 7.—15.

A comparison has been frequently made between the climate of the old world, in ancient and modern times, owing principally, to the progress and effects of cultivation; and our author has, with much reason, claimed for America this future amelioration of her climate. We have never seen the difference alluded to elucidated with more erudition and ability, than in the following extract:

"The winters must have been very cold, seventeen hundred years ago, in Italy, else Juvenal could not have mentioned the necessity of cutting the ice, on the Tiber, in order to come at the water.* Horace could not have described the streets of Rome, as full of ice and snow; nor could Virgil, with any propriety, have recommended great attention to young sheep, lest the cold should destroy them.

"In the present age, ice is not found on the Tiber. Cattle are not injured by cold in that part of Italy. Neither does the Euxine freeze, nor wine, in its vicinity, as formerly they did, when the Roman poet, in pathetic strains, lamented his banishment.† The northern parts of Spain, as Strabo tells us, were thinly inhabited, by reason of cold. And we are told by Livy, that, for a month together, the ground was covered with snow, four feet deep, at a town near Barcelona.* Germany was so cold, about the same epoch, that it would neither produce apples, grapes, nor other fruit.† The forests in Thrace and Panonia, as we are told by the ancients, were covered with snow through the greater part of the year; and white bears were common in Thrace as now in Siberia. There was a considerable degree of cold eighteen hundred years ago in Palestine, where they have very little winter at present, and very little cold, towards the latter part of March.‡ If we look farther back, one thousand years, we shall find that snow and ice were familiar to the inhabitants of that country.§

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* Hybernum fractâ glacie descendet in amnem.
Ter matutino Tiberi mergetur.
Juv. sat. vi. lin. 521.

"Glacies ne frigida lædat
Molle pecus."
Virg. Geo. lib. iii. l. 298.

† Ipse vides certe glacie concrescere Pontum
Ipse vides rigido stantia vino gelu.
Ovid de Ponto, lib. iv. el. 7.

"I shall add but another fact, in proof, that the winter's cold is greatly moderated within the temperate latitudes. It appears from the observation of travellers, compared with ancient historians, that though the number of lions is greatly decreased in Lybia, they have increased very much within the last two thousand years, in Turkey and Persia. This increase cannot be accounted for, as I conceive, except by observing that regions, which formerly were too cold in winter to become the residence of lions, are now so much warmer as to be fitted to their constitutions." p. 18—20.

The learned writer then enters at large into an exposition of the process by which cultivation renders a country temperate and warm. This branch of the subject is treated in a manner which evinces great powers of observation. He concludes with the following pleasing remarks:

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* Triginta dies obsidio fuit per quos raro unquam nix minor quatuor pedes alta jacuit.

Liv. lib. xxi. *Bel. Pun.*

† Germania frugiferum arborum impatiens. *Tacitus.*

‡ The servants and officers stood there, who had made a fire of coals, for it was cold. John xviii. 18.

§ He giveth snow like wool; he scattereth the hoar-frost like ashes; he casteth forth his ice like morsels: who can stand before his cold? Psalms cxlvii. 16, 17.

"When a considerable part of our mountains shall be subjected to the plow, and the Atlantic states shall be fully peopled, I deem it probable that cotton will be produced in Pennsylvania, and oranges in Maryland. It is not to be expected that the American winter, above the latitude of fifty degrees, will ever become more temperate than winters in corresponding latitudes of the other continent, for they are circumstanced, in many parts, nearly alike; but the temperature of the American summer, in low latitudes, will certainly become more desirable." p. 30.

Dr. Smith, the distinguished president of Princeton College, has written a very able and erudite treatise, entitled "An Essay on the Varieties of Complexion in the Human Species,"* the object of which is, to reconcile religion and philosophy, and to demonstrate the unity of the human race. Our author has taken the same side, and we recommend to our readers an attentive perusal of both works. They will have an excellent opportunity of seeing, in a conspicuous point of view, how two men of great genius and learning will treat the same subject, without having communicated with each other. It is not consistent with our limits to enter into a detail of the author's reasoning, or of the great variety of facts which he has comprized in his work. The proposition which he lays down on this subject, and which, in our opinion, he triumphantly maintains, is the following: "all the changes that have been made in the human species; all the difference in colour, shape, and feature that has been observed between one man and another, may doubtless be produced by climate, food, and education or habits," and in the course of this inquiry he fully demonstrates that the human race does not degenerate in America.

After this, the learned writer takes the opposite ground, and contends with great ability, that if any distinction may be looked for, in the process of time between the American and the native of the old continent; if the inhabitants of either continent are to excel those of the other in strength of body or of mind; if there is any part of the globe in which the human species may be expected to arrive at the greatest perfection, the favoured place will be found in America. This hypothesis is so flattering, and is supported with such plausible, not to say, powerful arguments, that did our limits permit, we would enrich our pages by transcribing them at full length; we must, however, refer the reader to the work itself, p. 169—180. Whether it will carry conviction home to every mind, we will not undertake to determine, but we take a pride and a pleasure in saying, that the superiority of America is maintained and enforced with more ability and learning by our countryman Williamson, than are exhibited by the splendid names of Buffon, Robertson, Kaimes, and Raynal to establish its degenerating effects. And we confidently assert, that it will require more intellectual energy to destroy the splendid and towering system of the one, than it took to produce the flimsy and unjust surmises of the other.

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* See the Review of Smith's Essay, in the Register, vol. 2. p. 70.

DOMESTIC INTELLIGENCE.

University of the State of New-York. Circular Address of the College of Physicians and Surgeons.

The Board of Trustees of the College of Physicians and Surgeons of the City of New-York, while they tender to their professional brethren their congratulations upon the successful establishment of this Institution, and the beneficial effects which have resulted from the arrangements made by the Regents of the University, at the re-organization of the College, in 1811, have great pleasure in announcing, that the several courses of instruction in the different branches of medical science will, as usual, commence, in this institution, on the first Monday of November next. The Session will be opened by an Address from the Vice President of the College, Dr. Benjamin De Witt.

Agreeably to the provisions made by Charter, Dr. John Augustine Smith, the Professor of *Anatomy, Surgery, and Physiology,* will give a complete course of Anatomical Demonstrations, connected with Physiology, and will illustrate his Surgical lectures, by performing the various operations in the presence of his class.

The Lectures on the *Theory and Practice of Physic and Clinical Medicine,* will be delivered by Dr. David Hosack, the Professor of those branches; and, for the purpose of exhibiting a full view of the numerous subjects which they embrace, he will meet his class daily, throughout the session.

The same gentleman, having been appointed Lecturer on *Midwifery* and the *Diseases of Women and Children,* will, at a separate hour, deliver a course of Lectures on those branches.

Dr. Wm. James Mac Neven, the Professor of *Chemistry*, will unfold the principles of that science, particularly in its relations to medicine and the arts ; and, with the advantages of an extensive apparatus and laboratory, he will afford to the students an opportunity of becoming experimentally acquainted with the numerous operations of chemistry.

The *Institutions of Medicine* and the *Materia Medica* will be delivered by Dr. Benjamin DeWitt, recently elected the Professor of those branches.

The above series of Lectures embrace all those delivered during the Winter Session of the College, and will terminate about the first of March.

The Spring Session, which will commence on the third Monday of April next, consists of Lectures on Natural History and on Botany.

The Lectures on *Natural History* will be delivered by Dr. Mitchill, and will be illustrated by the ample and rich cabinet of mineralogy and geology attached to the college, and an extensive museum to which the students can at all times have access.

The Lectures on *Botany*, which will unfold the anatomy and functions of the vegetable body, and illustrate the principles upon which botanical science is founded, will be given by Dr. Hosack ; and the State Botanic Garden, now placed under the care, and devoted to the use of the college, furnishes the most ample opportunities for the study of that most interesting branch of medical knowledge.

From the provision thus made, it will be seen, that the various courses of Lectures delivered in the college, are so arranged as to constitute a complete system of medical education. The Board of Trustees, however, think it incumbent on them to state, that since the last session it has been their unremitted endeavour, still farther to increase the means of instruction, and to render the advantages enjoyed by the college, at least equal to those of any other similar establishment in the United States. The anatomical museum has recently been augmented by some rare and valuable preparations, and very important additions have been made to the chemical apparatus and laboratory. The cabinet of natural history has also been greatly enriched by numerous specimens, illustrative of the geology and mineralogy of our country; and liberal donations have repeatedly been made to the State Botanic Garden, from the botanical institutions of Paris, and other parts of Europe. While the Trustees and Professors, therefore, confidently promise every exertion, on their part, to render their plan of education complete and satisfactory, they indulge the fullest hope, that nothing will be wanting to fulfil the just expectations and liberal views of their patrons, the honourable the Legislature, and the Regents of the University.

It is the duty of the professors to examine all applicants for Degrees, and to report to the Regents, those whom they approve, on or before the first day of March, in every year. The diplomas are then granted, and the degrees conferred, in this city, by the President of the College, DR. SAMUEL BARD, the candidate having previously undergone the necessary examinations, and publicly defended an Inaugural Dissertation on a subject in Medicine, or some of the auxiliary branches of Science. The Dissertation or Thesis may be printed, either in the English or Latin language, at the discretion of the graduate, with the approbation of three of the Professors.

By order of the Board of Trustees,
SAMUEL BARD, M. D. President.
JOHN W. FRANCIS, M. D. Registrar.

New-York, September 8, 1812.

PRIVATE MEDICAL SCHOOL

NEW-YORK.

Plan of Study adopted in the Private Medical School, established by David Hosack, M. D. *Professor of the Theory and Practice of Physic and Clinical Medicine, in the University of the State of New-York.*

TO THOSE STUDENTS WHO HAVE NOT RECEIVED A LIBERAL EDUCATION, THE FOLLOWING WORKS ARE RECOMMENDED PREVIOUSLY TO THE COMMENCEMENT OF THEIR MEDICAL STUDIES.

RHETORIC AND BELLES LETTRES.

Murray's Grammar, (large ed.)
Blair's Lectures on Rhetoric,
Duncan's Logic,
Campbell's Philosophy of Rhetoric,
Gregory's Letters on Composition,
Kett's Elements of Human Knowledge,
Barron's Lectures on Belles Lettres and Logic,
Gerard on Genius,
Do. on Taste,
Allison on Taste.

GEOGRAPHY.

D'Anville's Ancient Geography,
Pinkerton's Modern do.
Morse's American do.

HISTORY.

Priestley's Lectures on History,
Tytler's Outlines of General History,
Anquetil's Universal History,
Miller's Retrospect of the 18th Century.

NATURAL PHILOSOPHY.

Helsham's Lectures,
Gregory's Economy of Nature,
Cavallo's Natural Philosophy,
Imison's School of Arts,
Ferguson's Astronomy.

MORAL PHILOSOPHY.

Beattie's Elements of Moral Science,
——— Essay on Truth,
Paley's Principles of Moral and Political Philosophy.

It is also recommended to the young gentlemen, unprepared by a collegiate course of study, to attend, at least, one course of lectures on Mathematics and Natural Philosophy, as delivered in Columbia College; and to devote an hour daily to the Latin, Greek, and French languages, under the direction of a private teacher.

FIRST YEAR OF MEDICAL STUDIES.

ANATOMY

Cheselden's Anatomy,
System of Anatomy from the Encyclopædia Brittannica,
Bell's Anatomy,
Fyfe's Anatomy,
Wistar's Anatomy,
Jadelot's Myology, (coloured plates,)
Bell, on the Bones, Muscles, &c. (plates,)
Bell, on the Blood Vessels, (coloured do.)
—— on the Nerves, (do.)
—— on the Brain, (do.)
Cruikshank's on the Absorbents.

PHYSIOLOGY.

Haller's Physiology,
Blumenbach's do.
Richerand's do.
Gregory's Conspectus Medicinæ, vol. 1st.

CHEMISTRY.

Lavoisier's Chemistry,
Henry's Chemistry,
Black's do.
Jacquin's do.
Murray's Elements of Chemistry.

BOTANY.

Curtis on the Classes and Orders,
Smith's Botany,
Miller's Illustrations, (coloured plates,)
Willdenow's Botany,
Barton's Elements of Botany.

MATERIA MEDICA.

Lewis' Dispensatory,
Duncan's Edinburgh Dispensatory,
Murray's System of Materia Medica.
Pearson's Synopsis of do.

PRACTICE OF PHYSIC AND SURGERY.

Bell's, B. System of Surgery,
Bell's, C. System of Dissections,
Thomas' Practice of Physic.

SECOND YEAR.

ANATOMY.

Albinus' Anatomical Plates,
Edinburgh System of Anatomy,
Anatomie de Sabatier,
Cuvier's Comparative Anatomy,
Blumenbach's do.
Baillie's Morbid Anatomy,
Clossy's Dissections of Morbid Anatomy.

PHYSIOLOGY.

Moore's Medical Sketches,
Hewson on the Blood.
Falconar and Hewson's Experiments on do.
Hunter on the Blood,
Saumarez's Physiology,
Bostock on Respiration,
Cruikshank on Perspiration.
Physiologie de Dumas,
Fox on the Natural History of the Teeth.

SURGERY.

Cooper's Surgery,
Bell's, J. Surgery, by Smith,
Boyer on the Bones,
Bell's, C. Operative Surgery,
Abernethy's Surgical Observations,
Desault's Surgery,
Pott's Surgical Works,
Crowther on White Swelling,
Ford on the Hip Joint,
Cooper on the Joints,
Sheldon on Fracture of the Patella,
Russel on Necrosis,
Fox on the Diseases of the Teeth,
Hunter on the Venereal.

CHEMISTRY AND MINERALOGY.

Murray's System of Chemistry,
Chaptal's Chemistry,
Parkinson's Chemistry,
Accum's do.
Kirwan's Mineralogy,
——— Geology,
Cronstedt's Mineralogy.
Dumeril's Zoology.

BOTANY.

Hull's Botany,
Woodville's Medical Botany, (coloured pl.)
Linnæus' Systema Vegetabilium,
——— Genera Plantarum,
Willdenow's Species Plantarum,
Jussieu's Natural Orders,
Persoon's Synopsis.

MATERIA MEDICA.

Cullen's Materia Medica,
Moore's Strictures on do.
Duncan's Therapeutics,
Gregory's Conspectus Medicinæ, vol. 2d.
Barton's Collections towards a Materia Medica.

PRACTICE OF PHYSIC.

Cullen's Nosology,
——— Practice of Physic,
Wilson on Febrile Diseases,
Home's Principia Medicinæ,
Saunders on the Liver,
Willich on Diet and Regimen.

MIDWIFERY.

Bard's Compendium,
Denman's Midwifery,
Smellie's Plates.
Hunter on the Gravid Uterus, (plates,)

THIRD YEAR.

ANATOMY.

Vicq D'Azyr, on the Brain, (coloured plates.)
Scarpa Tabulæ Nervorum, (plates.)
Monroe on the Brain, Eye, and Ear,
——— on the Nervous System, (plates)
Sheldon on the Absorbents,
Morgagni on the Seat and Causes of Disease.

PRACTICE OF PHYSIC.

Fordyce on Fevers,
Huxham on Fevers,
Pringle on Diseases of the Army,
Blane's Diseases of Seamen,
Cleghorn's Diseases of Minorca,
Lind's Works,

Rush's Works,
Percival's Essays,
Fothergill's Works,
Reid on Consumption,
Whytt on Nervous Diseases,
Moseley on Tropical Diseases,
Senac on Fevers,
Heberden's Commentaries,
Duncan's Medical Cases,
Chisholm on the Malignant Fever,
Currie's Medical Reports,
Saunders on Mineral Waters,
Dickson on Gravel and Gout,
Wilson on Dyspepsia,
Young on Opium,
Crumpe, do.
Matthias on the Mercurial Disease,
Swediaur on the Venereal,
Bell on do.
Pearson on do.
M'Bride's Practice of Physic,
———— Experiments,
Trotter on the Nervous Temperament,
Warren on Diseases of the Heart,
Corvissart on do.
Willan on Diseases of the Skin, (coloured plates,)
Ferriar's Medical Histories and Reflections,
Robertson's History of the Atmosphere,
Hufeland on Long Life,
Alexander's Experiments,
Hamilton on Purgatives,
Richter's Observations,
Cogan on the Passions,
Pemberton on the Abdominal Viscera,
Sydenham's Works,
Boerhaave's Aphorisms,
Van Swieten's Commentaries,
Hoffman's Practice,
Celsus de Medicina.

SURGERY.

Bell, J. Surgery, (plates.)
Chirurgie de Pouteau,
Cooper on Hernia, (plates.)
Camper on Hernia, (plates.)
Scarpa on Aneurism,
——— on the Eye,
Saunders on the Ear, (plates.)
Ware on the Eye, Hæmorrhoids, &c.
Hey's Practical Observations on Surgery,
Jones on Hæmorrhage.

CHEMISTRY.

Thompson's System of Chemistry,
Johnson's Animal Chemistry.

MATERIA MEDICA.

Alston's Materia Medica,
Murray's Apparatus Medicaminum.

MIDWIFERY AND THE DISEASES OF WOMEN AND CHILDREN.

Hamilton, A. Works on Midwifery,
———— J. jun. do.
Denman's Aphorisms
Clark's Midwifery,
Burn's Works on Midwifery,
Baudeloque's Midwifery,
White on Lying-in Women,
White, on the Swelling of the Lower Extremities of Lying-in Women,
Perfect's Cases of Midwifery,
Cheyne's Diseases of Children,
Underwood's do.
Heberden's do.
Sparman's do.
Cheyne's Pathology of the Larynx and Trachea.

PHYSIOLOGY AND PATHOLOGY OF THE HUMAN MIND.

Reid's Inquiry,
——— Active Powers,
——— Intellectual Powers,
Hartley on Man,
Stewart's Philosophy of the Human Mind,
———— Philosophical Essays,
Crighton on Mental Derangement,
Arnold on Insanity,
Haslam on Madness,
Pinel on Insanity.

HISTORY OF MEDICINE.

Cabanis' Revolutions in Medicine,
Friend's History of Medicine,
Le Clerc's do.
Hillary, on the Means of Improving Medical Knowledge,
Percival's Medical Ethics,
Zimmerman on Experience.

BOOKS OF REFERENCE.

Martyn's Language of Botany,
Milne's Botanical Dictionary,
Turton's Medical Glossary,
Cooper's Surgical Dictionary, by Dorsey,
Nicholson's Chemical Dictionary,
Aiken, J. & C. do

PERIODICAL WORKS, RECOMMENDED TO BE READ.

London Medical Transactions,
London Medical Observations and Inquiries.
Physical and Literary Essays of Edinburgh,
Chirurgical Transactions, by Hunter, Home, &c.
London Medical Museum,
London Medical Communications,
Memoirs of the Medical Society of London,
Medical Facts and Observations,
Duncan's Medical Commentaries,
———— Annals of Medicine,
Edinburgh Medical and Surgical Journal,
Medical and Chirurgical Review,
London Medical Review,
Annual Medical Register and Review,
Transactions of the Medical Society of London,
Memoires de L'Academie Royale de Chirurgie,
Journal de Medicine,
Bibliotheque Medicale,
Nicholson's Philosophical Journal,
Tilloch's Philosophical Magazine,
Annals of Philosophy,
Transactions of the Royal Society of Edinburgh,
Memoirs of the Manchester Society,

Transactions of the American Philosophical Society,
Memoirs of the American Academy of Arts and Sciences,
Memoirs of the Connecticut Academy of Arts and Sciences,
Transactions of the College of Physicians of Philadelphia,
New-York Medical Repository,
Coxe's Philadelphia Medical Museum,
Barton's Medical and Physical Journal,
Massachusetts Medical Communications,
New-York Philosophical Journal and Review,
Eclectic Repository,
American Medical and Philosophical Register,
Potter's Medical Lyceum,
New England Journal of Medicine and Surgery,

In the preceding list are enumerated those writings on medicine and the auxiliary branches of science, an acquaintance with which is deemed essential to constitute the basis of a medical education. And though it is not expected that any student, however laborious, can render himself familiar with them during the short period of time to which his studies are necessarily limited, yet it is to be hoped, that thus seeing a plan of study before him, he will remit no honourable exertion to its successful acquisition. The works of those distinguished writers will have taught him duly to appreciate the dignity and importance of his profession, and in the intervals of practice he will be induced to complete whatever of this outline he shall have left imperfect. The private library of Dr. Hosack, consisting of the most valuable medical writings, ancient and modern, is also constantly open to the student for the sake of reference and more satisfactory information. In addition to this source of instruction, he is also supplied with anatomical preparations and other apparatus necessary to make him acquainted with the structure and the diseases of the human frame. And for the more complete accomplishment of his plan, Dr. Hosack has associated himself with John W. Francis, M. D. by whose assistance he is enabled to afford to his pupils the advantages of daily lectures and examinations throughout the year.

Suitable apartments are also provided for the accommodation of the student, and such regulations adopted as will secure the benefits both of a private and a public system of instruction.

Dr. Williamson's History of North Carolina.

To all who feel an interest in the colonial history of this country, we announce with great pleasure the publication of the long expected work on North Carolina, by Dr. Williamson, a writer in all respects competent to narrate the important events of her colonization, and to exhibit a faithful description of her natural history. In our next number we shall review at length this excellent performance.

Officers of the Society of Arts, of the State of New-York—for 1812.

The Hon. **Robert R. Livingston**, LL. D. President, Livingston's Manor.

Simeon Dewitt, M. A. P. S., Surveyor General, 1st Vice-President, Albany.

Hon. John Tayler, 2d Vice-President, Albany.

James Low, M. D. Recording Secretary, Albany.

David Hosack, M. D. Corresponding Secretary, for Southern District—resides in the city of New-York.

Samuel Bard, M. D. do. do. for Middle District—resides at Hyde-Park, Dutchess county.

Horatio Gates Spafford, A. M. do. do. for Eastern District—resides in Albany.

James Geddy, do. do. for Western District—resides at Onondaga.

Charles D. Cooper, M. D. Treasurer, Albany.

Stephen Van Rensselaer, Senior Counsellor.

G. W. Van Schaick, Dewitt Clinton, I. Hutton, Benjamin De Witt, M. D., John Woodworth, Timothy Clowes, A. M., E. C. Genet, P. S. Van Rensselaer—Counsellors.

Commencement in Columbia College, &c.

At the Annual Commencement of Columbia College, held on the fourth of August last, the Degree of Bachelor of Arts was granted to twenty three young gentlemen, senior students of that institution. The Degree of Master of Arts was also conferred on John Fine, the Rev. John Brady, John Cadle, Dr. John Wakefield Francis, W. F. Osgood, Peter D. Vroome, and Ravaud Kearney, Alumni of the College.

At the Annual Commencement, held at Yale College, New-Haven, in September, 1812, the degree of Doctor of Laws was conferred on BENJAMIN RUSH, M. D. Professor, &c. of the University of Pennsylvania.

At the Annual Commencement of Queen's College, New-Jersey, held in September, 1812, the degree of Doctor of Laws was conferred on the Honourable DEWITT CLINTON, Esq. Lieutenant Governor of the state of New-York, &c.; and the degree of Doctor of Divinity on the Rev. THOMAS Y. HOWE, of this city.

Observations on the Weather of the city of New-York, for the months of July, August and September, 1812.

JULY.

As a general remark, we may state that the weather for the months of July and August, of this year, was very unlike that of the same months in the preceding summer, being characterized in a remarkable degree for its great moderation as to temperature, and uniformity in other respects. During the whole of July scarcely a day occurred in which the heat was higher than 82 degrees at 3 o'clock, P. M., if we except the

5th, when the thermometer stood at 87, at the same hour. The lowest degree of thermometrical heat was at 7 o'clock on the morning of the 1st, when the mercury was at 58. The general range of the thermometer, for each day during the month, may be stated at about 70, at 7 A. M.; at 79, at 3 P. M.; and at 75, at 7 P. M. Rain, however, fell in considerable quantities at different times, and many days were either overcast or cloudy. Wind often N. or N. E. though more frequently from the westward.

AUGUST.

There was very little difference in the heat of this month from that of July; the lowest point at which the mercury stood was 66 degrees at 7 A. M. on the 18th; the highest at 82 degrees, at 3 P. M. on the 21st. Rain fell on the 6th, 10th, 11th, 12th, 13th, and 14th. On the 17th, still greater quantities fell, accompanied with wind from the N. E. On the 19th, 20th, 21st, 22d, 25th, and 27th, we again had more rain; wind generally N. E. or southerly.

SEPTEMBER.

Though we experienced many clear and pleasant days during September, we had also many others on which the temperature of the weather was remarkable for its coldness and the quantity of rain which fell. The highest degree of heat was on the 2d, when the thermometer stood at 7 A. M. at 71; at 3 P. M. at 80; and at 7 P. M. at 72. On the 20th, the mercury stood at 7 A. M. at 50; at 3 P. M. at 62; and at 7 P. M. at 59. With but little variation, this was the temperature of the weather during the remainder of the month. Considerable quantities of rain fell on the 4th, 5th, 20th, and 24th. Wind generally westerly.

Quarterly Report of the Diseases which prevailed in the city of New-York, during the months of July, August, and September, 1812.

The catarrhal fever noticed in our last quarterly report has occasionally appeared during the past season; and we have again reason to be satisfied with the opinion we have already expressed, that it is a disease purely inflammatory, and that the practice by copious bloodletting and other evacuations, is the only means of counteracting it, and of preventing the typhoid type which has been described by many physicians as characteristic of this disease, but which only supervenes when the anti-phlogistic treatment has either been totally neglected, or inertly pursued during the first stage. We are also confirmed in the correctness of the view which has been taken of this subject, not only by the state of the weather, which has been for the most part unusually cool and favourable to the production of inflammatory complaints, but from the nature of the other diseases which have prevailed at the same time; viz. croup, sore throat, pleurisy, rheumatism, &c. which have all been met with in our practice during the last three months. But although inflammatory disorders have frequently occurred, we have had occasion to prescribe for most of the diseases of the warm season, viz. intermittent fevers, cholera morbus, cholera infantum, &c. For notwithstanding the coolness of the season in general, we have had many days in which we experienced considerable degrees of heat. Intermitting fevers have been unusually prevalent not only in the city but in the neighbouring country, and in many instances have exhibited a tendency to the continued form, and frequently an inflammatory character, which has required the lancet to subdue the first degree of violence with which their invasion was attended.

Among other complaints which have been met with, is a case of *phlegmasia dolens*, or milk leg. This occurred about two weeks after parturition, and several days after the lochial evacuation had totally ceased: which discharge, therefore, could have had no agency in the production of the disease, as has been supposed by Dr. Denman and others. It, however, yielded in a few days to fomentations, and the use of calomel and squills, as recommended by Dr. Bard.* We have also seen a fatal case of croup occurring in an infant four months old. It commenced exclusively in irritation of the trachea, but the practitioner first called, having neglected the use of the lancet and vomiting, it soon extended to the lungs, exhibiting all the symptoms of pneumonic inflammation, and a total disappearance of the peculiarities of croup. We notice this fact as an evidence that croup is not confined to the trachea, but extends to the lungs and to the whole system; and that where blood-letting, emetics, &c. have been neglected, or have failed in the first stage, there is little to hope for from tracheotomy, as has been advised by some writers on this subject. We also avail ourselves of this occasion to remind physicians of the truth, that venesection is no less necessary in the treatment of this and other inflammatory diseases, in early infancy, than in the adult state.

We have also remarked, that eruptive diseases have been more than usually prevalent and obstinate during the past season; especially pemphigus, impetigo, herpes, and others of the orders *bullæ*, *pustulæ*, and *vesiculæ*, of Dr. Willan. They have, however, yielded to the alterative remedies which we have been in the habit of employing, not only in syphilis, but in inveterate cutaneous diseases in general, which either proceed from, or may be connected with, a taint of the whole system.

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* Compendium of Midwifery.

The alteratives, to which we refer, are the corrosive sublimate either in the form of pill or solution,* and the decoction of the woods, aided by a vegetable diet, the warm bath, and an ointment, consisting of equal parts of the sulphur and tar ointment, applied upon going to bed, to the eruptions themselves. The writer takes this occasion to observe, that for twenty years past, with the exception of the ointment last mentioned, he has employed the same treatment with success for the cure of syphilis, not only when this disease may have been recently contracted, but in the most malignant form which it assumes when it has been neglected or badly treated. He here also enters his protest against the salivating system by friction, with *mercurial ointment*, and the use of *calomel*, so commonly had recourse to by the physicians of this city. It is true, that these forms of exhibiting mercury very soon affect the gums, but it is no less true, that when mercury exerts its influence upon the salivary glands, in proportion as this influence is manifested, it ceases to operate upon the other excretions of the system, and consequently is less active in eliminating from the body the poison of the disease. But the reader will see the opinion here intimated more fully expressed and illustrated in the Inaugural Dissertation on the Abuse of Mercury, lately published by a graduate of the College of Physicians and Surgeons, Dr. John W. Francis, which dissertation, both on account of the facts which it contains, and the language in which they are communicated, is equally deserving the attention of the pupil and the practitioner of medicine.

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* In the eruptive complaints of children the writer prefers the solution, as less irritating to the bowels: his prescription is as follows: two grains of the corrosive sublimate to an ounce of brandy; from six to ten drops, according to the age of the child, to be taken three times a day in sweetened water.

Before we take leave of this subject, we deem it our duty to give another caution, particularly to the young physician, not to be too precipitate in pronouncing ulcers of the throat and eruptions of the surface, to be the effects of the long continued use of mercury; and before he decides whether the disease is ascribable to the abuse of that metal, or to the unextinguished syphilic poison, carefully to inquire what quantity of mercury has been taken, in what form, how long it has been continued, and what has been its operation. The writer is led to this caution by a case which lately fell under his care. The patient had been prescribed for by a very eminent physician, who directed calomel internally and the mercurial ointment externally. In two or three days after the use of the medicine, salivation was produced; the mercury was accordingly discontinued; the salivation ceasing, mercury was again resorted to, and salivation as before, the consequence of two or three days use of it. He was pronounced cured. In about three months ulcers of the throat appeared, attended with the eruptions and blotches characteristic of syphilis. His physician persisted in the first opinion he had expressed, that the original disease was cured, and concluded that the symptoms which had supervened were merely the consequences of mercury. A common gargle was prescribed; but when he fell under the writer's care, notwithstanding the diligent use of his gargle, he had nearly lost the uvula and a portion of the velum pendulum palati. By the use of a saturated solution of blue vitriol, applied to the ulcers three times a day, the corrosive sublimate pill night and morning, and a warm bath three times a week, together with a vegetable diet, and abstinence from wine and other excitants, he was soon restored to health. We are led to the notice of this interesting subject from a perusal of the valuable writings of Matthias and Abernethy, on the Mercurial Disease. The observations of these authors are doubtless calculated to do much good, but we cannot suppress the fear, that in the hands of the inexperienced, they may also lead to error.

Rush's Inquiry into the Diseases of the Mind.

Professor Rush, of the University of Pennsylvania, whose attention for a considerable time past, has been particularly devoted to the Physiology and Pathology of the Human Mind, intends shortly to put to press a volume bearing the above title. The work will be comprised in about four hundred pages 8vo. and will embrace not only all the different forms of madness, but the physical theory of the disease of the passions, and their respective remedies.

New-York City Library.

We are gratified to learn, that the Trustees of the New-York City Library have lately committed to the press a Catalogue of the extensive and valuable collection of Books contained in that institution.

RECENT AMERICAN PUBLICATIONS.

American Ornithology, or the Natural History of the Birds of the United States. Illustrated with plates, engraved and coloured from original drawings taken from nature. By Alexander Wilson. Vol. 6th, imperial 4to. Philadelphia. Bradford & Inskeep.

The History of North Carolina. By Hugh Williamson, M. D. LL. D. &c. &c. 2 vols. 8vo. Philadelphia. Dobson.

Discourse delivered before the New-York Historical Society, at the Anniversary Meeting, held on the 6th of December, 1811. By the Honourable Dewitt Clinton, Esq. one of the Vice-Presidents of the Society, 8vo. New-York. Eastburn.

A Course of Mathematics, for the Use of Academies, as well as private Tuition. By Charles Hutton, LL. D. F. R. S. Revised and Corrected by Robert Adrain, A. M. Professor of Mathematics in Queen's College, N. J. 2 vols. 8vo. New-York. For the Booksellers.

The New England Journal of Medicine and Surgery, and the Collateral Branches of Science. Conducted by a number of Physicians. No. III. for July, 1812. Boston. Wait & Co.

Sketches, Historical and Descriptive, of Louisiana. By Major Amos Stoddard, Member of the United States Military Philosophical Society, and of the New-York Historical Society. 8vo.

An Account of the New-York Hospital. 8vo. New-York. Collins & Co.

Map, and Historical and Biographical Chart of the United States. By David Ramsey, M. D. &c. Charleston.

A Chronological Table of the Principal Events which have taken place in the English Colonies, now United States, from 1607 till 1810. Explanatory of and Supplementary to the above. By D. Ramsey, M. D. &c. Charleston. Hoffs.

TO READERS AND CORRESPONDENTS.

Dr. Stearns' Essay on Croup; the paper on Cold, and other communications from our friends are unavoidably postponed until our next number.

⁂ Communications for the American Medical and Philosophical Register, are requested to be addressed to Dr. David Hosack, New-York.

THE
AMERICAN
MEDICAL AND PHILOSOPHICAL
REGISTER.

JANUARY, 1813.

ORIGINAL COMMUNICATIONS.

I.

A Dissertation on Cynanche Trachealis, or Croup, *read before the State Medical Society of New-York, by* John Stearns, M. D. &c. *of Albany, in a letter to* David Hosack, M. D. *New-York.**

Although Doctor Home was the first systematic writer upon this disease, yet that it was known long before his time, we have the most satisfactory evidence in the writings of the ancients.

His opinion of its proximate cause has been sanctioned by the authority of names whose infallibility it would be almost deemed heresy to question. But however hazardous the attempt, or hopeless the success, I shall not hesitate to offer an opinion totally at variance with the one which he advanced, and which has since been universally adopted by the *fashionable* adherents to authorities. And here, permit me to observe, that it is with much satisfaction that I have read a number of recent publications upon this subject, by men eminent for talents and medical science. It is by such investigations, excited by the collision of sentiment, that truth ever can be attained. Perhaps no disease of equal mortality has been less understood, or till lately, excited less attention from the medical world. Error has therefore sanctioned error, till the innovator, like Sydenham of old, would now be stigmatized with the crime of heresy.

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* In the essay on croup, inserted in vol. ii. of the Register, some notice was given of the opinions of Dr. Stearns: our readers have now an opportunity of seeing, at large, his *peculiar* views of this important disease.—*Ed.*

I am well aware, that to assert and to maintain that the croup is not originally an inflammatory disease, will incur the reprehension of those who have been accustomed to venerate the opinion of ages, and whose practice has always been regulated by that opinion. But happy am I to observe, amidst this mass of prejudice, some coruscations of truth in the most recent publications, from which two thirds of the inflammatory theory has been discarded.

But although I cannot expect a perfect coincidence of opinion with those writers, yet, I trust that others, whose opinions have not obtained equal publicity, will accurately investigate the original and progressive symptoms of this disease; not in the books of visionary theorists, but in the unerring volume of nature—at the bedside of the patient. Such investigations, fully and impartially conducted, must result in the conviction, that this *is not in its commencement, or progress, an inflammatory disease*, but that its *proximate cause* consists in a *torpid state of the absorbents of the trachea*, the modus operandi of which has already been sufficiently explained in the 195th page of the 5th volume of the Medical Museum.

This opinion I shall, therefore, now proceed to corroborate by the following considerations inferred from,

1st. *Its Causes.*

1st. Cold is universally conceded to be one of the most prominent causes of the croup. An elucidation of the immediate operation of this cause, will in some measure explain the nature of the complaint it may induce. It will therefore be necessary to premise a solution to the question, is cold, abstractly considered, sthenic or asthenic?

I trust it will be unnecessary to quote the sentiments of ancient writers upon this subject; their practice clearly indicates their belief in its debilitating operation. Hence Hippocrates and his immediate successors uniformly prescribed cold drinks, and even the affusion of cold water in diseases of increased febrile action. And it was not till the appearance of the alexipharmic physicians, that this practice was discontinued. False reasoning now disclaimed the requisitions of nature, and the poor victim was hurried to the grave by accumulating the morbid heat of the arid system. To eradicate the prejudices originating from this theory, required all the efforts and high reputation of the immortal Sydenham. Amidst a torrent of unprecedented abuse from his contemporaries, he, however, effectually succeeded in restoring the cooling treatment of his great predecessor. This practice has been universally adopted and extended by the moderns; and the success which accompanies its application in diseases of increased febrile action, sufficiently evinces the debilitating operation of cold.

"It cannot be doubted that the power of cold is always more or less directly sedative," are the words of Cullen, whose authority I trust my opponents will not attempt to controvert.

Such also is the opinion of Rush, and of many other writers of celebrity of the present day. Indeed, so universally prevalent is this theory of the operation of cold, that I deem it totally unnecessary to multiply proofs upon this point. I deem it, therefore, perfectly safe to assume the position, that, abstractly considered, in its operation upon the human system, cold is asthenic, and uniformly debilitates, and that the morbid action which it induces is exclusively *asthenic* until it is succeeded by the application of a higher degree of temperature, or a stimulus of another kind. It is upon the latter principle alone, that cold ever becomes the cause of inflammatory diseases. This subject is susceptible of the clearest illustration, and most convincing proof, a minute detail of which would be entirely superfluous to medical gentlemen, and far exceed the prescribed limits of a dissertation.

If, then, cold directly debilitates, may not its application to the body, or trachea, be so modified as to induce a debility in the absorbents generally, or in those of the trachea in particular, without being succeeded by inflammation? Those who oppose this conclusion will not admit the most obvious phenomena of the human system; they forget that dropsies are thus frequently produced. But if cold alone will produce this effect, how much more certain will be its operation when combined with,

2d. *Moisture*. The debilitating effects of this combination are too obvious to be denied, and are often manifested in the production of intermittents, from which the croup, in its incipient stage, does not essentially vary.

All writers agree, that marshy situations and a humid atmosphere are most favourable for the production of croup. Is it in such situations that we are to look for inflammatory diseases? Are exhalations from marshes necessary to induce that high tone of the system which constitutes inflammatory action? Do we not rather expect in such situations intermittents, croup, and other diseases of debility? The operation of those miasmata produces the spasm of Dr. Cullen; or, in other words, a torpor of the surface of the body. May not the same miasmata, applied under other circumstances, induce a torpor of the absorbents of the trachea, and thus constitute the true symptoms of a well marked croup, without producing the least vestige of inflammation? Will any one undertake to affirm, that this torpid state of the vessels bears any resemblance to inflammation? As well might they affirm that a similar state of the absorbents, in all cases of dropsy, also indicated inflammation.

No one, I presume, will hesitate to admit, that a torpor of the absorbents of the trachea does sometimes take place. What then are the symptoms which indicate such an affection? Is it possible rationally to conceive of any other than such as do actually occur in croup?

This is also coroborated by the similarity of effect produced by this affection of the absorbents in other cavities of the body. The fluid which accumulates in those cavities, when permitted to evaporate, assumes the same condensed texture as the preternatural membrane formed in the trachea by this disease; this has been verified by repeated and satisfactory experiments.

3d. *Other Diseases.* There is no disease which the croup is found so frequently to accompany, or to succeed, as the *cynanche maligna:* the experience of every practitioner concurs with all writers upon this subject, in establishing the truth of this fact. That the latter is a disease of extreme debility, in which, although a superficial redness and swelling appear in the fauces, bleeding would be extremely hazardous, is also a fact equally confirmed by the concurrent testimony of the highest authorities in medicine; some of which it may not be improper to cite.

Doctor Cullen says "the debility with which the *cynanche maligna* is attended, renders all evacuations by bleeding and purging improper."

Doctor Withering says, "in *cynanche maligna,* the blood is florid and tender, and the nature of the disease is putrid."

Mr. Colden remarks, that "the consequences of evacuation is an insurmountable tendency to mortification, so that the very orifice made by the lancet mortifies."

Doctor Cullen further observes, "that upon dissection it appears that in *cynanche maligna* the larynx and trachea are affected in the same manner as in *cynanche trachealis*," and it is probable, that in consequence of that affection the *cynanche maligna* often proves fatal by such a sudden suffocation as happens in the cynanche trachealis."

It appears then, from the same high authority, that two distinct and opposite diseases contemporaneously exist in the fauces and trachea; one highly inflammatory, and to be cured by bleeding, "ad deliquum animi;" the other of that malignant putrid tendency, in which bleeding is most solemnly proscribed as a fatal remedy. Embarrassing indeed must be the situation of that physician who is called to prescribe in such a case. Would he not be induced to hesitate before he hazarded this herculean remedy; and would not reflection naturally suggest a doubt of the accuracy of the theory already promulged? However plausibly theorists may reason upon the contra-indications of diseases, I never can believe that two diseases of distinct and opposite natures can exist in the system at the same time. However the symptoms may apparently differ, yet nature is one, the disease is ultimately a unit, and the variety in symptoms is resolvable into the same primary cause.

The simultaneous combination of these two diseases, therefore, can be explained only upon the principle that they are both diseases of debility, that both are produced by the same cause, and, consequently, that both require the same general treatment.

That the debility which exists in the fauces in *cynanche maligna* should be communicated to the trachea, and produce a similar affection in the absorbents of that part, ultimately terminating in croup, is an hypothesis, clear and consistent; but that it should ever induce active inflammation, without a radical change in the nature of the complaint, is absurd, and contrary to uniform experience. We should also naturally conclude upon the principles already advanced, that the facility of this communication, and the consequent liability to tracheal affections, would gradually increase toward the decline of the disease, as debility succeeded to febrile action: this conclusion is verified by facts. All medical writers concur in opinion that croup is more frequently a termination than a concomitant of this disease.

I am aware of the reply that may here be suggested, that croup also sometimes succeeds to small pox, measles, &c.; but as I have never witnessed this occurrence, I think it may fairly be presumed to take place only in that stage of of those diseases when debility has actually commenced. This opinion is confirmed by the testimony of practitioners who have seen this variety of those diseases.

2*d*. *The Symptoms.*

It is with extreme regret and diffidence that I venture to deviate from my medical brethren on a subject so perfectly within the controul of actual observation, as are the symptoms of this complaint; yet such has been my lot, that I have not been fortunate enough to witness those symptoms of inflammation which medical writers generally describe. I have sometimes observed a reaction in the system, accompanied with a degree of heat and fulness of the pulse, but in no instance have I noticed that tension which indicates inflammatory action. The febrile action is generally of short duration when it is succeeded by a weak irregular and tremulous pulse, and by that degree of diminished heat which indicates a high grade of debility. I appeal to every reputable practitioner for the truth of these remarks, and I challenge any one to place his finger upon the pulse in any stage of the disease, and honestly declare his firm conviction of that kind of tension that is a true criterion of inflammation.

If then this evidence does not exist in the pulse, where is it to be found? Is it in that superficial redness and swelling of the fauces, which but rarely occurs, and which all admit, is not necessarily connected with the complaint? All practitioners know that this redness sometimes accompanies a laxity of fibre, and is increased by depletion, as in cynanche maligna.

Is it indicated by a peculiar painful sensation and heat in the trachea, of which the patients sometimes complain?

The most excruciating pains and heat frequently result from the torpor of any particular organ, and are removed by stimulants.

Is it indicated by the coagulable nature of the fluid exuded into the trachea, and which forms the preternatural membrane? This, as has already been observed, in no respect differs from the fluid that is exuded into other cavities of the body in dropsies, and which experiments have converted into a membrane of similar density.

Is it indicated by that preternatural heat of the skin which sometimes occurs in the incipient stage?

This is never so great as the heat which always accompanies the paroxysm of an intermittent, or the latter stages of a typhus gravior.

Is it indicated by the termination of the disease? Doctor Cullen says, "although this disease manifestly consists in an inflammatory affection, it does not commonly end either in suppuration or gangrene." As inflammatory diseases, which prove mortal, generally assume one of these terminations, an inquiry naturally arises, why this highly inflammatory disease, so essentially deviates from others of the same class.

Doctor Cullen's answer, which ascribes this failure to a spasm of the muscles of the glottis, is, to my mind, totally unsatisfactory, and involves him in a difficulty unusually embarrassing.

If any practitioner will adduce an instance in which a *simple* case of the croup has had either of these terminations, I will totally abandon the ground I have taken. I would not however be understood to deny that the trachea is ever affected by any degree of inflammation in this disease; such an affection does sometimes occur in a slight degree, whether it originates from the efforts of nature to remove the disease, or from the irritation produced by the friction of the condensed membrane in the struggles to respire, or from any other incidental cause, it is impossible to ascertain, and totally immaterial. I only contend that it is not necessarily connected with the disease; which is proved by its being frequently found to exist without any such affection.

On a careful review of the individual and collective symptoms, as they appear in the commencement, progress, and termination of this disease, I have been disappointed in searching for satisfactory evidence of inflammation; I have therefore had recourse to

3d. *Dissections.*

I have with much care, minutely examined the trachea of four infants who died of croup, in three of which, not the least trace of inflammation could be discovered; the fourth exhibited some evidence of such an affection, but was not so clearly designated as to place it beyond dispute.

The inference deduced from these cases is, that as three afforded no evidence of inflammation, the fourth was affected by some incidental cause not necessarily connected with the complaint: this conclusion is corroborated by similar observations made by other dissectors.

Doctor Richard Bayley, of New-York, who was a strong advocate for the inflammatory theory, relates three cases of dissection which exhibited no marks of inflammation; on one of which he thus expresses himself. "At the dissection several gentlemen of the faculty were present, and we were equally surprised when it was discovered that the parts beneath the new formed membrane were entirely free from disease."

Doctor Home also relates several cases of dissections which did not discover the least vestige of inflammation. Similar discoveries have been frequently made by other dissectors, but enough has already been cited to establish the position that the croup does sometimes exist without any symptoms of inflammation. How are we to explain the phenomena of the disease in such cases? Are not the symptoms precisely similar to those cases which are denominated inflammatory, and were they not so considered till disproved by actual demonstration? Is it a satisfactory solution to this difficulty, to assert that the croup is sometimes inflammatory and sometimes not? Those acquainted with diseases know that when an inflammatory disease loses its phlogistic diathesis, its nature is completely changed; pneumonia would, in that case, cease to be characterized by that name. The absurdity therefore of this mode of solving the difficulty is too apparent to require a formal refutation.

4th. Treatment.

On this subject a variety of opinions divides practitioners. Some recommend bleeding "ad deliquum animi" as indispensably necessary; others are equally sanguine in the belief that it is always injurious: although so totally distinct in practice, these different classes unite in advocating the same phlogistic theory, many of whom are considered high authorities in medicine. But is not actual demonstration preferable to the highest authority that can be adduced? Error can never be converted into truth by the weight of names: error at its inception continues error in its progress. The demonstration of a Harvey dispelled the mists of error which had been sanctioned by ages. Yet the prejudices of his cotemporaries prevented the acknowledgment of that conviction, which his correct views of the circulation must have produced. Such, also, was the success of a Hoffman and a Cullen, in exposing the errors of the humoral pathology, that the vascular has been universally received in opposition to the laboured disquisitions of the greatest talents, aided by the strongest prejudices of antiquity.

Fortified by these examples, and with a full conviction of the truth of the theory I have advanced, I have ventured to dissent from the highest authority of the republic of medicine. But I trust the facts which I have adduced, with the preceding remarks, afford some plausible ground for the course I have taken, which will acquire additional strength from the success of a different mode of treatment.

Bleeding copiously in this disease has long been the universal practice, and long have we had to deplore the fatality of the croup: but I trust the period has arrived, when a more consistent theory will conduct the treatment to a more successful issue; when depletion by the lancet will, in most cases, be considered a hazardous experiment.

To show that I am not alone in this opinion, it may not be improper to cite a few authorities upon the propriety of this remedy. Speaking of croup, Doctor Hartly says, "I have tried evacuations of all kinds, and frequent bleedings were of no service."

"It is difficult to discover," says Dr. Crawford, "in what cases Dr. Millar judged venesection proper."

Doctor Rush was of a similar opinion in his original publication upon this subject.

Doctor Smith found bleeding highly injurious, and of a list of eighteen cases which he has published, seven were bled, five of which died, and two only recovered, while the remaining eleven who were not bled, all recovered. Although these authorities have no claim to antiquity for a sanction to their opinions, I trust the fidelity of their observations will not, therefore, be the less credited. It is with much pleasure that I am, from my own experience, enabled to bear testimony to their truth; while I cannot forbear expressions of regret for the ill success that attended the free use of the lancet in the early part of my practice. Embarrassed by the fatality of a disease which baffled the remedies usually prescribed, I was induced to reflect with more attention upon the nature of the prominent symptoms, by which I was determined to be exclusively influenced. Names are always deceptive, and often lead to the use of remedies sometimes improper for the disease. Not being able to discover any symptom that indicated the necessity of depletion, I was resolved to suspend the use of the lancet till such indication should appear. The event completely justified my determination, from which I have never since found it necessary to deviate.

I will not however affirm that bleeding is, in all cases, improper: some may occur in which the use of the lancet will be indicated. I can only say that such have not occurred to my notice.

My principal object, in the selection of remedies, has been to excite the action of the lymphatic system, but particularly the absorbents of the trachea, by a sudden and powerful operation. A combination of calomel and antimony, in large doses, generally succeeds in producing this effect. At the same time that one operates upon the stomach, the other commences its operation upon the intestines, and the whole alimentary canal becomes thus simultaneously affected; the torpid lymphatics are thence roused into action, and the loose cough which immediately succeeds, evince, that the absorbents of the trachea are re-assuming their office. Till these effects are produced, I repeat the dose every eight hours, using, in the intervals, those stimulating auxiliaries generally prescribed, such as seneka, warm bath, epispastics to the trachea, inhalations of the steam of vinegar, ether, &c.; remedies better calculated to remove a torpor of the absorbents, than to obviate all phlogistic diathesis. Doctor Archer says, the seneka, and assa fœtida, operate in this disease by their stimulating qualities alone.

In their ardor to support the phlogistic theory, its advocates should not forget the stimulating operation of the remedies which they invariably prescribe.

The preparation of antimony, which I have generally combined with the calomel, is the stibium antimonii, but as its operation is sometimes too slow and uncertain, I have occasionally substituted the tartrite of antimony with equal success.

Those who have not been minutely attentive to the diagnostic symptoms of croup, and particularly to the extreme torpor of the stomach, are alarmed at the doses which I prescribe; judging, as they do, of the powerful operation of these medicines in other diseases, they transfer their effects to the croup, and indiscriminately condemn the practice. A little experience and careful investigation will remove this error. The more clearly to elucidate it, I shall subjoin a case in which the torpor of the stomach baffled the operation of the most powerful doses that I ever prescribed.

In December, 1810, at 9 o'clock, A. M. I was called to visit the child of G. S. aged 4 years. It had been affected with the usual symptoms of croup two hours previous to my visit, and was rapidly growing worse; I immediately gave it fifteen grains of calomel, and eight grains of stibium antimonii; in two and a half hours I called again, and was surprised to find it had produced no sensible effect: I then gave twenty grains of calomel, and ten grains of stibium antimonii, and directed seneka, warm bath, epispastics, and the inhalations of the steam of vinegar: two hours afterwards the medicine had produced no operation, and the disease was fast increasing: I then gave twenty grains of calomel, six grains of the tartrite of antimony, and directed three grains of the latter to be given every half hour. The directions were faithfully pursued, without producing the least cathartic, emetic, or even nauseating effect. The child expired at 8 o'clock, P. M. of the same day, eleven hours from the time I first saw it, and thirteen from its first attack.

In this case, fifty-five grains of calomel, eighteen grains of the cerated antimony, and eighteen grains of the tartrite of antimony, were given in the short space of eleven hours.

This is an extreme case, and exhibits an astonishing instance of the torpor of the stomach, and the necessity of an early administration of the most powerful remedies. But in ordinary cases, in an advanced stage of the complaint, twenty grains of calomel, and eight grains of cerated antimony combined, will produce but two or three operations as an emetic, and as many by stool. Where then is the danger from this powerful remedy? It exists only in the prejudiced mind.

Every case of the croup, unconnected with any other disease, in which these remedies have operated, has afforded the most complete evidence of their success. No other treatment has been equally satisfactory to me, and I presume, not to others, where both have been fairly tried.

II.

AN INQUIRY *into the* ACTION OF COLD *upon the* ANIMAL BODY. *By a Friend to Improvement.*

OF the various questions which have at different times engaged the attention of medical characters, none, perhaps, has led to more ardent discussion than that of cold, both as respects its nature and its operation. Its well known power in the production, as well as in the removal, of some diseases, discloses an object of sufficient importance to account for the particular attention it has received from the practitioner of medicine; and its connexion with the more general phenomena of the universe, as exhibited in the scenes of winter, has drawn on it the labours of the student, and admirer of nature. Thomson, in his celebrated poem on the *Seasons*, has described the obscurity and intricacy of the subject, in the following elegant manner:

> " What art thou, Frost? And whence are thy keen stores
> Deriv'd, thou secret, all-invading power!
> Whom e'en th' illusive fluid cannot fly?
> Is not thy potent energy, unseen,
> Myriads of little salts, or hook'd, or shap'd
> Like double wedges, and diffus'd immense
> Thro' water, earth, and ether?"

We find, on examining the records of medicine, that professor Mushenbroek many years ago attempted to establish a plausible theory of the nature and operation of cold, on the mechanical doctrine which prevailed in his time. According to him, cold was a peculiar agent, distinct from heat and all others, consisting of frigorific particles. It was supposed, that by the introduction of these atoms, or particles, into our organs, the sensation of cold was produced. When a piece of ice, or a lump of cold iron was laid on the warm hand, the particles of frigorific matter were imagined to be precipitated into the hand, and the sensation of cold which ensues, was, by him, imputed to the mechanical impulse made on the sensible fibres. Shortly after this singular piece of speculation was ushered into the world, chemistry experienced great and unlooked for improvements. The laws of heat, and many of its phenomena, largely partook of the true light reflected from the talents and labours of a few great chemists. Among these, the name of Black is pre-eminently conspicuous, and the votaries of science should long hold the recollection of his useful and splendid labours in the most grateful remembrance. It is to his inimitable researches into the laws and effects of heat, to his just explanations of the evidently mistaken observations and experiments of professor Mushenbroek, the world has been chiefly indebted for the complete refutation of the doctrine of the positive and distinct nature of cold. As the effects of every agent on the living body, as well as its mode of action, depend in some degree on their nature, it becomes necessary to have a perfect understanding on this head, as respects cold. The term has been used by some writers to express indefinitely, either a condition of surrounding bodies, to produce in our organs the sensation of cold, or to convey a meaning of the sensation itself. This indeterminate sense of the word is objectionable. First, because it imposes the expression of, or rather identifies as the same, two different ideas, viz. the cold agent, and the sensation; and secondly, because it is too vague for precise inquiry. The facts and experiments which prove the terms, heat and cold, to be of a relative import, only implying the same fluid in different degrees, are at the present time so generally known and admitted, that an enumeration of them would be useless, it being only necessary for the purposes of this inquiry, to avow my perfect adoption of it. *Cold*, then, I beg leave to consider an abstraction, or an inferior degree of heat, and neither an indefinite condition of surrounding bodies to produce the feeling of cold, nor the sensation which succeeds its application to our organs. But for the sake of a further understanding, it may be necessary to advert for a moment, to what will constitute this lesser degree of heat. By it, I mean simply to express that condition of bodies in contact with our organs, which arises out of their temperature being inferior to that possessed by the living matter at the time of their application. For example, whenever an article is applied to any part of our body whose heat is below that of the living substance, no matter whether the animal heat be either above or below its natural standard, it forms what is called a cold agent, which is a lesser degree of heat. Water of the same temperature may feel both hot and cold to the same hand by varying the heat of the latter, which proves that the faculty of producing a feeling of cold, is not dependant on *any specific low degree of heat*, but wholly on the temperature of the agent *being lesser than that of the organ affected.*

Having made these preliminary remarks, I shall pass on to a consideration of the effects of cold, and its mode of action. At different times, various have been the opinions and the speculations of physicians on this subject. By some, it has been believed that cold has many modes of operation; by others, that it is solely a stimulant; and by many, it is contended that it is exclusively a sedative or a debilitating agent. Dr. Cullen asserts, that cold is not only stimulant and sedative, but that it is also possessed of considerable tonic and astringent powers. His words are, "beside the sedative and stimulant powers of cold, it is manifestly, also, a powerful astringent, causing a contraction of the vessels of the surface, thereby producing a paleness of the skin, and a suppression of perspiration; and it seems to have similar effects when applied to other parts. It is likewise probable, (continues the doctor) that this constriction, as it takes place especially in consequence of the sensibility of the parts to which the cold is applied, will in some measure be communicated to other parts of the body, and that thereby the application of cold proves a tonic power with respect to the whole system." If the paleness of the skin and suppression of perspiration, which occur on an exposure to a cold atmosphere, were the effects of increased vascular action on the external surface, then the heart and large arteries would also have their motion invigorated, as the cold air would have an equal opportunity to rouse their activity through the thin texture of the pulmonary surface, as it would have of stimulating the capillaries through the cuticle. So far, however, is this from being the case, that numerous experiments have proved that the action of the heart and arteries becomes languid, and the pulse less frequent, while the body is exposed to a cold atmosphere. Reasoning on the uniform disposition of cold to diminish the excitement by depriving the system of a portion of its heat, and the authority of experiment, induce me to doubt the force of the doctor's conclusions, and to impute the paleness of the skin, together with a suppression of the perspiration, to a general subsidence of excitement, but more especially in the cutaneous circulation.

This explanation, I trust, will seem the most probable, as it is natural to suppose that the first effects of an inability, in the heart and arteries, to force the blood through the fine vessels of the external surface, would be a paleness of the skin, and a suppression of the perspiration. His assertion of cold being not only *stimulant*, but likewise *sedative*, seem more obviously incorrect, it being difficult to conceive how the same cause should be able to produce directly opposite effects. He defines sedatives to be certain articles, whose operation *diminishes* both the sensibility and irritability of the system, and thereby *the motions*, and the power of motion.

Stimuli, so far from *directly destroying action,* he supposes to be "powers *exciting the action of moving fibres.*" A late advocate of the stimulating operation of cold, deduces from Dr. Cullen's definition of stimuli, the following curious argument in support of his doctrine: "This definition," he says, "has never been exploded, and yet cold is found to excite both motion and sensation." He asks the question, "is the definition erroneous, or is cold a stimulus?"

Strange infatuation! The ingenuity of some theorists in supporting their doctrines is worthy of remark; but in justice to truth and more honourable inquiry, their art must not be permitted to pass by unexposed. Mark the construction of this quoted argument: "Dr. Cullen considers stimuli as powers exciting the action of the living principle, whether causing sensation, or producing the action of the moving fibres." "This definition," he says, "has never been exploded, and yet cold is found to excite both motion and sensation. Is the definition erroneous, or is cold a stimulus?" The sentence is so worded as to draw the attention of the incautious reader from what I conceive to be a most erroneous assertion of cold, being able "to excite both motion and sensation," by pointedly intruding upon him the reverend Professor's definition, and then the more general question of what the modus operandi of cold is; thinking thereby, perhaps, to force the reader into an acquiescence of opinion, and at the same time to conceal from his notice the assertion, which is as unfounded in truth as the whole doctrine it was intended to support. If mere assertion is to be taken for matter of fact, it would be wondrous easy to establish the stimulating operation of cold, or any other piece of speculation. The same writer says, "one of the first effects of cold is paleness of the skin and cutis anserina. In the scrotum a remarkable contraction is produced. There is 'action of the moving fibre,' propagated like other impressions, by sympathy. The same effects result from certain sounds, as that which is heard in filing the teeth of a saw. Ideas of the mind often excite cutis anserina."

Certain sounds and ideas may produce these effects by a stimulant mode of action, but this will no more prove cold a stimulus, than sleep, being produced by darkness, proves it to be stimulating, because opium does the same thing. In defending this stimulant theory, its advocates appear entirely to disregard the nature of cold, or its connection with heat, reasoning on its operation, as if it were some separate cause of motion, and seem to avoid a discrimination of the changes it induces in the living body, from the effects of certain other agents avowedly stimulating. That such has been their policy, is openly declared by the writer whose remarks have just been quoted. His own words are "when two causes produce precisely the same effect, is it not perfectly just to conclude that both act in the same way, and therefore, that both are stimulants, or both sedatives." If such a rule, of inferring identity of causes from similarity of effects, should be granted, I would at once confess it would require no great labour or ingenuity to prove cold a stimulus. As respects the living body, I believe no rule would lead to more confusion and false inquiry, than this. Fox-glove, and blood-letting induce precisely the same state of the pulse, and every one must know how ridiculous it would be "to conclude that both act in the same way, and therefore, that both are stimulants, or both sedatives." Indeed, so far does this proposition seem to be allied to truth, that it is not uncommon to perceive opposite causes resulting in effects very similar, and that too, by modes of action evidently different. The similarity, and perhaps the identity of the effects, arising out of the two debilities of action and abstraction, is illustrative of the remark; and the striking difference between the causes inducing those states of the body, stimuli and debilitating agents, as well in their modes of action, should be regarded as quite sufficient to expose the futility of inferring identity of causes from similarity of effects.

Resuming the further consideration of the argument, it may be said that medical knowledge, at the present time, is too imperfect to admit of such an explanation of the action of either *harsh words*, or *ideas of the mind*, as would be approved of by the cautious reader. I will, however, venture to predict, that whenever their action is clearly ascertained, it will prove as foreign to that of cold, as the operation of the latter is unlike that of a stimulus. I beg leave to adopt the more general, as well as the more plausible opinion, that paleness of the skin and cutis anserina, from cold, are the effects of an evidently debilitating, and not a stimulating operation. I must again allude to what has been previously stated. Cold, by which is meant nothing more than a lesser degree of heat, induces torpor in the extreme vessels, and the cutaneous circulation becomes diminished. There would of course be less blood pushed through the collapsed capillaries, thereby giving rise to a paleness of the skin; and cutis anserina would also be formed by the same shrivelling of the superficial parts, having the subcutaneous miliary glands in a visible state. And as relates to the "remarkable contraction" of the scrotum, it is well known to the anatomist, that elastic cellular membrane composes no inconsiderable part of that organ, and by abstracting a portion of the flaccid and relaxing influence of heat, cold would very readily throw this general appendage into a rugose condition. In this case, however, there is no more vital contraction from stimulus and excitability, than there is in the well known bracing or contraction of a pouch of gum elastic, from an exposure to a degree of cold. The effect, it is conceived, must be entirely imputed to the condensing or corrugating operation of a low temperature on the universally acknowledged elasticity of cellular substance.

The application of Dr. Cullen's theory of the stimulant and sedative powers of cold to the practice of medicine, will, if I mistake not, disclose some inconsistencies. In the treatment of diseases consisting of excessive action in the arterial system, the first indication of cure, according to his practice, is to moderate the violence of reaction, and this, the doctor says, may, in conjunction with other means, be accomplished by the application of air, of a low temperature, to the body. "Some late experiments," says this respectable writer, "in the small pox, and in continued fevers, show that the free admission of cool air to the body, is a powerful remedy in moderating the violence of reaction." The experiments alluded to were certainly correct, and have since been confirmed by the most ample experience; but if it were as evident as he has supposed, that "cold is a stimulus to the living body, and *particularly to the sanguiferous system,*" why, to the entire disregard of this sentiment, advise so stimulating, and, as one would imagine, so obnoxious a remedy in inflammatory diseases; and that too, as he tells us, to moderate the violence of reaction? The doctor's second indication of cure in continued fevers, is to remove the cause, and obviate the effects of debility, which he proposes to accomplish by the use of stimulant and tonic remedies. Notwithstanding experiments were quoted to show that cold is a powerful remedy in moderating the violence of reaction, we find it placed by him at the head of his class of tonics, and strongly recommended to support and increase the action of the heart and arteries.

It appears from the concurrent observation of different writers, that when the animal body is surrounded by an atmosphere of about sixty-two or sixty-three degrees of heat, by Fahrenheit, it retains its own standard temperature, and that neither durable sensations of heat nor cold can be produced, unless the temperature of agents applied is either considerably above, or below the degrees mentioned.

If the body were suddenly exposed to a very low temperature, the first change which would occur, would be a loss of several degrees of its heat, and I conceive, according to the extent of the loss of this active stimulus, would the excitement subside. That such a decrease of action does really ensue, no further proof, one would suppose, could be required, than the knowledge of the fact of the system having been deprived of a portion of stimulus; and of course, *the sum of excitement must be diminished.* Such a view of the subject admits no room for the supposition of a stimulant power. Had the opinion of Mushenbroek been confirmed, or could it be made to appear, that cold possesses some absolute and separate property from its inherent disposition to draw heat out of the living body when in contact with it, then there would have been some foundation for the hypothesis of its stimulant action. The appearances the body takes on when exposed to cold, some of which have previously been noticed, clearly evidence what its real operation is. The paleness of the skin, the cessation of perspiration, the slow and weak pulse, which have been observed to take place, are expressive marks of diminished excitement. First, because the same effects are known to occur when the body is in a state of debility from other causes; and secondly, they are proved to be the effects of lessened, and not increased excitement, by their being quickly succeeded by an evident accumulation of the excitability.

Hence the blush of the face after an exposure to a blast of cold air, and hence the glowing warmth of the whole frame after emerging from the cold bath.

The stimulant theory seems to fall short of a satisfactory explanation of the effects of a moderate degree of cold: let us, in the next place, see how it will embrace the facts connected with the operation of a great degree of it. If cold produce its effects by a stimulant mode of action in the case of a frosted limb, the excitement of the part must be primarily augmented, and by a continuance of the operation of the cold, the capacity to excitement would become expended to such a degree as to ultimately prove incompetent to the longer continuance of vital motion. Then the limb becomes frozen; and respecting the indication of cure, this must be determined by the kind of torpor which constitutes the affection. If it be produced by a stimulating power, then the state of a frozen limb must be that of high, indirect debility. Now, in the cure of indirect debility, we are told that active stimuli can only be relied on; therefore, by this doctrine of the stimulating action of cold, we should be induced to apply to a frozen limb, stimulants of the most vigorous description. The consequences of such practice would be as fatal to the patient, as the theory from which it has been inferred, is, in my opinion, foreign to the truth. The extreme liability of a frosted limb to become inflamed, under the influence of no more than ordinary stimulus, shows the affection under consideration, consists of direct, and not indirect, debility. This pathological construction, founded on the debilitating operation of cold, it is well known, as invariably conduces to a successful medical treatment, as that derived from the other theory would end in gangrene and mortification.

The experiments of the late Mr. Hunter* are sometimes referred to, as affording superior evidence of a stimulating power in cold. Had I not seen them quoted under such an apparently high sense of their weight and importance on this question, I should not have felt it necessary to notice them. I beg to be understood not to intend any reflection, either on them or their immortal author, wishing only to assert that these experiments seem not much to affect the present question. They were made by pushing a thermometer through incisions made into the abdomen of various animals, immediately before and after an exposure of them to a refrigorated atmosphere. By comparing the warmth of their viscera at those different periods, Mr. Hunter endeavoured to ascertain the faculty of the animal œconomy, to produce and retain sensible caloric. Some zealous supporters for the stimulant theory, without making any deduction for that increase of animal heat which must unavoidably arise out of the wounds inflicted, and the irritation produced by thrusting the thermometer among the sensible viscera, have contended that the change of temperature observed by Mr. Hunter, was occasioned by an exciting power of cold.

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* Animal Economy.

The late Dr. Currie, of Liverpool, distinguished no less for literary knowledge than medical eminence, in his very useful work on the effects of the warm and cold bath, has advocated the stimulating action of cold. The beneficial effects observed to follow the affusion of cold water in the torpor of convulsion, and in the apoplectic state of fever from the fumes of charcoal, are particularly urged in support of his opinion. It is however well known, that remedies of different modes of action have produced effects equally salutary in different states of the same disease; I cannot therefore discover any particular force in the doctor's argument. If the rule were admissible, to denominate every remedy a stimulus which produces beneficial effects in tetanus and apoplexy from the fumes of charcoal, then blood-letting would seem somewhat stimulating, as it has often been useful in both of those diseases. If it could be established that tetanus and apoplexy were, necessarily, diseases of such a debilitated state of the body, as would make the stimulating method of cure necessary, then I think Dr. Currie's argument would better apply. This, however, cannot be done. To fluctuate from one state to another is the very nature of diseases of all kinds, and that physician who will attempt to restrain either tetanus or apoplexy, within the narrow limits of a uniform character, must aim at an object far beyond the reach of his talents. It is true, that a stimulating mode of cure, in general, is found necessary in tetanus, but it must be equally well known, that in some cases, an opposite plan only would answer. Dr. Moseley says, the Spanish surgeons in the colony rely on bleeding and emetics; and the very respectable Dr. Percival advises bleeding, cupping, blistering, &c., as the remedies which have proved, in his hands, the most useful in the removal of apoplexy occasioned by the fumes of charcoal. The analogy which is generally believed to exist between the operation of cold and darkness, has been objected to by Dr. Currie. On this point he discovers ingenuity, but on account of many reasons, I am most decidedly of the opinion their effects are highly similar. Cold produces evident inactivity in the superficial vessels, and thereby occasions a suspension of the functions of the skin: darkness causes evident inactivity of the retina, and thereby suspends vision. Cold accumulates the excitability of the system to the action of stimuli: darkness accumulates the susceptibility of the retina to the stimulus of light. But these analogies, though they go to prove the operation of cold to be like that of darkness, directly sedative, or debilitating, do not directly refer to his particular objection to the comparison. He says their operation must be dissimilar, because cold produces sensation, while darkness does not. Had he substantiated this assertion, by either plain facts or reasoning, it would be granted that the parallel was deficient, and it would also be confessed, if it had been proved cold can excite sensation, that at least one strong argument might be urged in favour of its stimulant operation. But I will attempt to show that the objection has no other ground to rest on but mere assertion, and is one of the many common opinions, too often met with and adopted by writers, without either timely reflection or examination. It is contended, that the primary influence of cold on the body, is the abstraction of several degrees of the stimulus of heat; consequently, the original quantum of vital action which the standard heat of the system had excited and maintained, must now lessen in the ratio of the loss of stimulus. The primary effect of cold, being an abstraction of heat, it follows, that the sensation of cold cannot occur until this effect of cold had taken place; then the sensation ensues, and this period of its occurrence is immediately subsequent to the diminution of excitement occasioned by the loss of heat, which must necessarily depend on the reduced excitement still retained by the organ to which the cold agent had been applied. That the sensation of cold does not arise out of a direct stimulus applied, "exciting the action of the moving fibres," but is really connected with, or dependent on the lessened excitement of the part, can be made very plain. If the sensation and the pain of cold were the consequence of an increase of action in a part, should not that part, agreeably to all the established laws of excitement, become less excitable to stimuli than previously? It certainly should; but we find cold is so far from consuming excitability, which it should do if it were a stimulus, that it actually leaves a part in the possession of more of this principle than it at first had. When the hand is thrust into a snow bank, or into iced water, though the pain and the sensation of cold are felt to a considerable degree, yet in a very short time after withdrawing it, both an increase of warmth and action take place. Hence the face becomes of a red colour in a cold day on turning from the wind, and hence the redness of our hands when warmed by the fire. If, in those opposite conditions of the system, direct debility, and an inflammatory state, the effects of cold be contrasted with those of acknowledged stimuli, such as opium and ardent spirits, other proofs of its sedative action will be furnished. These stimuli, by creating excitement, remove weakness in the one, and aggravate the morbid affection in the other. Can cold, in the same states of the system, produce similar effects? Let us see what its effects are in the cold stage of fever; a state of debility in which it should prove beneficial if it be *tonic*, *astringent*, and *stimulating*. "While the patient," says Dr. Currie, "was still in the cold stage of the paroxysm, the assistants removed him from his bed, his pulse was small and frequent, his extremities shrunk and cold; in this state the brine* was dashed over him as usual, but not with the usual happy effects, his breathing was for some minutes almost suspended, his pulse at the wrist was not to be felt, the pulsations of the heart were feeble and fluttering, a deadly coldness spread over the surface, and when respiration returned, it was short, irregular and laborious."

This looks very unlike the operation of either tonic or stimulus.

Irritants, or stimuli, are, for reasons the most obvious, avoided in inflammatory complaints; if cold be a stimulus, it must be injurious also. Let us see how it is. "Some late experiments," says Dr. Cullen, "in the small pox, and in continued fevers, show that the free admission of cool air to the body, is a powerful remedy in moderating the violence of reaction." Then cold must be sedative, or we must suppose that the heart and arteries can have the violence of their reaction in the fever of small pox, &c. *stimulated into moderation.*

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* A bucket of cold water, made additionally so by dissolving in it common salt.

If cold be stimulating, the common custom of associating its use with the lancet, in diseases of great morbid action, must be inconsistent in theory, and injurious in practice. Let us again ask the oracle, experience, whether physicians at all times, and in all countries, have thus grossly erred. In the yellow fever, which nearly depopulated the city of Philadelphia, by its ravages in the year 1793, our not less great, than worthy Dr. Rush, used cold water in connection with the lancet, with the most decided advantage. "Cold water," says the professor of the institutes, "was a most agreeable and powerful remedy in this disease. I directed it to be applied, by means of napkins, to the head, and to be injected into the bowels by way of clyster. It gave the same ease to both, when in pain, that opium gives in pain from other causes. I likewise advised the washing of the face, and hands, and sometimes the feet, with cold water, and always with advantage."

The examination of the effects of cold has not been confined altogether to speculative research, but has been very closely, and I may add, very ably investigated in an experimental way. Without attempting a detail of what has been done, it may be proper to state that the principal experiments which have been made, are those of Dr. Currie, before quoted; Dr. Stock, of Great Britain; and of Dr. Joseph Klapp, of this city. Those of the last gentleman are pretty numerous, and seem to have been modified in such a way as to meet the principal difficulties of the subject. As a very proper conclusion to this essay, I must beg permission to transcribe them, his mode of proceeding, and the result of his experiments so perfectly corresponding with my own sentiments. Dr. Klapp introduces the subject with an appropriate passage from Darwin, and then makes a few observations on the advantages of his mode of experimenting.

"Some modern writers have called cold a stimulus to animal fibres, which it always renders torpid or inactive; a theory derived from Galen, and which must have originated in his total ignorance of chemistry and natural philosophy." "When the philosophic inquiries of the chemist into the nature of cold, were contrasted with the speculations of the physician, concerning its modus operandi, it was remarked that the former had long since approximated truth by the guide of experiment, while the latter was still involved in controversy and doubt, in consequence of its having been in the most of instances left to the disposal of hypothesis and the most pliant facts."* To this observation, however, the late Dr. Currie, of Liverpool; and Dr. Stock, of Bristol, must now be noticed as exceptions.

They respectively instituted a series of experiments, the results of which favour opposite opinions. Dr. Currie was a warm advocate for the stimulating operation of cold; while Dr. Stock, with equal zeal, and, in my estimation, with more success, has endeavoured to establish a contrary theory. But their mode of experimenting does not appear to be altogether free from objection; at any rate, it certainly cannot be considered the most decisive method of prosecuting this highly important inquiry. The persons who were the subjects of their experiments were nearly, or quite immersed, and in some instances, plunged suddenly into cold water, and the state of their pulse was afterwards taken, as an indication of the change of excitement which the cold produced in their systems. It appears to me, that this method of experimenting unavoidably incurs such a degree of impression on the system, from other causes, as to make it a matter of extreme difficulty to decide with certainty on the true and separate effects which ought to be attributed to the cold. For example, the sudden change of medium, from that of atmospheric air, to water, must operate in some degree on the system, with the force of a mechanical agent. And one would naturally suppose that those muscular exertions which were incurred in excessive shivering, and in swimming backwards and forwards, would infuse into the system, with cold, such blended effects, as to make it a question what ought to be imputed to collateral agents, and what was really produced by a mere change of temperature. With the expectation of being able to avoid all, or the most of these difficulties, I have instituted a few decisive experiments, which, with a few exceptions, were performed in a medium of air, instead of water. In this way the living system was only liable to a variation of its excitement from a change of temperature, as unusual muscular exertions were prevented by the subjects of the experiments, walking composed out of one room into another. It is true, that even in this most precautionary way, some tremor, or shivering did occur, but not to such an extent, it is conceived, as would affect the result of the experiments.

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* Alluding to his Anniversary Oration before the Philadelphia Medical Society.

Experiment 1st. On due examination, my pulse was ascertained to afford seventy-four pulsations per minute, and as to quickness and fulness, it was as usual. My feet and legs were then immersed in a bucket of cold water, a few degrees above the freezing point. The gentleman who gave me assistance was very cautious and particular in noticing every change which occurred in the pulse, and the following is an exact account of his report: two minutes after the immersion, the pulse beat sixty-three strokes the minute; three minutes, sixty-two; four minutes, sixty-two; six minutes, sixty-four; and seven minutes from the commencement of the immersion, it afforded sixty-nine pulsations per minute. As the water was now acquiring warmth, the experiment was discontinued. The pulse was observed not only to become less frequent, but it lost much of its force and fulness.

As the design of the experiment related, appeared well calculated to produce decision in the present controversy, I was induced to repeat it after Dr. Rush, and its result with me confirms the doctor's statement.

Experiment 2*d*. My feet and legs were immersed in a tub of recent snow, which had fallen during an exceeding cold night of the month of January. On placing the ball of Farenheit's thermometer in the snow, the mercury immediately descended to the freezing point. In two minutes after the beginning of the immersion, the pulse became very weak and full, in frequency, from seventy-four pulsations, to fifty-eight, in a minute. This experiment was repeated the same evening, on a healthy young man, with the same result. In both instances, after the immersion had been discontinued for the compass of a few minutes, the pulse resumed something more than its usual force and frequency.

To those inferences which these experiments obviously afford, it may be replied, "even admitting it as a fact, that cold does always diminish arterial action, it does not follow from thence, that it is in its nature, necessarily, and essentially a sedative, or a debilitating agent; because digitalis and saccharum saturni, when taken internally, reduce both the force and frequency of the pulse; so, also, does tartar emetic; yet neither of these articles can be considered as a sedative. They are all powerful stimulants to the stomach, and reduce arterial action only by sympathy." Instead of the conclusion of the sedative operation of cold from the fact of its directly reducing the force and frequency of the pulse, "bespeaking a partial view of things," I am most decidedly of the opinion, that this method of reasoning is perfectly consonant with every established and rational rule of judging of the modus operandi of medicines. To assert that saccharum saturni, digitalis, and tartar emetic, reduce arterial action in the same way as cold, exposes a singular disregard to all experiment and observation. Dr. Moore, who graduated in this university some years ago, has related, in his inaugural thesis, a number of experiments, which indisputably prove that the primary effect of digitalis on the system, is an acceleration of the pulse; and from my own observation on different persons, while under the primary impression of large doses of saccharum saturni, and last, an emetic, I can with confidence declare, that they both first elevate the pulse for a few strokes, before they diminish it in frequency. My experiments on these two articles will perhaps, ere long, be handed to the public.

If cold be a stimulus, then its general application to the animal body, comprising not only the cutaneous, but the pulmonary surface, must augment muscular strength and arterial action. With the view of investigating this point, the following experiments were instituted, with such a regard to fairness and impartiality, as to induce me to challenge such as may doubt to repeat them.

Experiment 3d. The gentleman who was the subject of the last experiment, when repeated, exposed himself nearly naked, to an atmosphere which sunk the mercury, in the thermometer of Fahrenheit, to the freezing point. On examining his pulse, one quarter of an hour after the commencement of the experiment, it had lost much of its force and fulness, and was diminished in frequency, from seventy-six, to sixty pulsations in the minute.

In reply to the various proofs which have from many quarters been obtained, of the power of a high degree of cold to diminish the force and frequency of the pulse, it has been asserted that such evidence is not conclusive, since the fact "is only true with regard to very high degrees of cold, and a moderate degree of it invigorates the blood vessels, muscles, and every other part of the system." This opinion is openly exposed and refuted by the succeeding experiments.

Experiment 4th. After different examinations were made by a medical assistant, my pulse was found to beat, in the radial artery, sixty-eight times in a minute, and was usual, as to force and fulness. I now walked into another room with no clothes on excepting my shirt, and after being exposed to its air, of the temperature of forty degrees of Fahrenheit, for twelve minutes, the pulse afforded fifty-eight feeble strokes in a minute; in fourteen minutes it was at fifty-six; in fifteen, fifty-six; in sixteen, fifty-four; and in seventeen minutes from the beginning of the experiment, the pulse emitted fifty-six weak strokes in the minute.

Comparative with the degrees of cold, which were used in the former experiments, that of the last one may be termed moderate; but notwithstanding this variation of temperature, it does not appear that the effects produced on the pulse, are in any respect different, except in degree.

The following, however, may be deemed more to the point, and therefore more satisfactory.

Experiment 5th. J. E.'s pulse, after due examination, was found to beat seventy regular, and usually, full strokes, per minute. He then walked into another room, with no clothes on excepting a loose shirt; and on the sixteenth minute of his exposure to an atmosphere of the temperature of fifty degrees of Fahrenheit, his pulse beat sixty strokes; on the eighteenth, fifty-eight; and on the nineteenth minute, it afforded fifty-nine pulsations; from the commencement to the end of the experiment, the pulse was sensibly diminished in force and fulness.

Feeling some degree of curiosity to ascertain what effect the exclusive application of cool air, first to the pulmonary and then to the cuticular surface, would have on the force and velocity of the pulse, I concluded on gratifying this particular inclination by performing the two following experiments.

Experiment 6th. On examining, A. B.'s pulse was found to be at seventy-six usually full and regular pulsations the minute. Cool air, of the temperature of forty-five degrees, was respired through a long tube put through the window, while the mercury in the thermometer, was at seventy degrees in the room in which the subject of the experiment stood. On the sixteenth minute from the beginning of this process, the pulse was at seventy; on the eighteenth, it beat seventy-two strokes; and on the nineteenth minute, seventy-two. The volume of the pulse was evidently softer and smaller than it had been.

Experiment 7th. J. E.'s pulse yielded sixty-eight strokes in a minute, and regular. He exposed himself, nearly naked, to air of the temperature of thirty-five degrees of Fahrenheit, and at the same time breathed air through the tube, out of a room in which the quicksilver in the thermometer stood at sixty-five degrees. On the fifth minute of the exposure of J. E. the pulse beat only fifty-eight times; on the sixth minute, fifty-nine; and on the seventh minute it afforded sixty strokes, the size of which was diminished, and the force of the pulse was weaker than previous to the experiment.

Thus it appears from the foregoing experiments, that not only high and moderate degrees of cold, applied generally to the body, but when applied to the cutaneous and pulmonary surfaces separate, diminish the force and frequency of the pulse. "Those gentlemen," continues Dr. Klapp, "who gave me assistance in this practical department of my inquiry, can bear testimony to the unexceptionable description of not only the design, but the performance of the experiments.

They will, therefore, I hope, carry to every candid mind, all the weight and decision which have been attached to them by those persons who were present at their performance. In short, both *reason* and *experiment* pronounce cold a debilitating agent."*

I have now completed a cursory inquiry into the effects and operation of cold on the animal body. The essay has been written in too much haste to possess either perfect correctness of language, or eloquence of style; and with respect to the subject, I am forced to acknowledge it somewhat tedious. Notwithstanding, those difficult subjects immediately relating to the cure of diseases, must not be neglected because the path of their investigation happens to run through an uninviting field of science.

When the practical department of medicine shall be so improved and extended as to become most able to lessen the physical evils of mankind, then will it justly deserve to be denominated the science of humanity. For the promotion then, of both the honour and usefulness of the medical profession, *particular attention must be paid to the operation and the effects of medicine.*

Philadelphia, 1812.

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* Coxe's Medical Museum, vol. 5.

III.

Account *of the* Origin *of the* Yellow Fever *which prevailed in the City of New-York in the Summer of* 1798, *communicated in a letter to* David Hosack, M. D. &c. *from the Reverend* John M'Knight, D. D. *late Minister of the Brick Presbyterian Church, in New-York, &c.**

Chambersburgh, Nov. 6, 1809.

Dear Sir,

The unsettled state which I have been in since I saw you last, occasioned by my removal from New-York, and getting fixed in this place, have hitherto prevented my compliance with your request, to furnish you with a statement of the several things which I mentioned to you in conversation, respecting the yellow fever.

I believe it is generally admitted that the sickness which was in New-York in the year 1791, and of which, about thirty, or between thirty and forty persons died, was of the same kind with that which was afterwards distinguished by the name of the yellow fever. General Malcolm was the first, or among the first of those who fell a sacrifice to it in this year. It was supposed at the time, that his sickness was occasioned by a drink of cold spruce beer when he was warm. But I understood, at the same time, that he had just returned from on board a vessel, and was much fatigued by walking in a hot sun. I had the fever the same year; I am persuaded, however, that I did not take it from General Malcolm, though I visited him the day before he died, and was with him when he died, and attended his funeral; nor from several other persons whom I visited in their sickness, or several funerals which I attended of persons who died of this fever. But I have no doubt that I received it from a man of the name of Morrison, a blue dyer, who lived at the corner of Dover and Pearl-streets. Being called upon to visit him, I found him dying, and apparently, wholly insensible. In compliance with the wishes of his friends, I prayed with them. The room was full of people, the air confined and disagreeable, and here I inhaled the contagion which occasioned my sickness.

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* Of the numerous epidemics with which the city of New-York has been visited, there is none so memorable as that which prevailed in the year 1798, both on account of the unprecedented violence with which it raged, and the great mortality which accompanied it. The many and contradictory accounts of the origin of this epidemic, which have already been published, abounding in idle conjecture and false reasoning, must give place to the interesting and satisfactory statement of the reverend author, which the editors have now in their power to offer to the public.—*Ed.*

On a Monday, in a very hot day in the summer of the year 1795, Doctor Malachi Treat, who was at that time the physician of the port, called at my house about twelve o'clock: he was very warm, and his face red, like scarlet; he complained that he was very unwell, but said that he had been trying to walk it off. He told me he had been to visit a vessel the day before; that, some of the hands being absent, he had assisted in rowing the boat; that there were some on board the vessel sick; and that others had died on the passage. He mentioned to me, in particular, that there was one man dead on board, and wrapped up in his hammock; that he opened the hammock, and found a stench issuing from it exceedingly disagreeable, and different from any he had ever before experienced; and that to this he imputed his indisposition. He told me, moreover, that he assisted in conveying the corpse to Governor's Island, and in interring it there. We proposed to him to lie down, to which he consented; but after having gone part of the way up stairs, he paused, and said he must go home to give directions about some medicine which was to be sent out. He accordingly returned home, and never went out again until he was carried to his grave, in the latter end of the same week.

In the first, or one of the first years in which the fever raged with particular violence in Philadelphia, I had occasion to go up into Pennsylvania. I made it my business to collect all the information that I could respecting the fever, particularly as relates to the communication of it to others, from those who, having taken it in the city, died of it in the country. Of the information which I received, I distinctly recollect the following instances: A young man who had been at Philadelphia with his waggon, took the fever there, and died of it at Lancaster. He was taken out of the waggon and buried; but I could not learn that any of those who had been employed in this act of humanity received any injury from it. His brother, however, who came to Lancaster to take the waggon home, and who, on the way, lay in the same bed clothes which his brother had lain in, took the fever, and died of it.

Two boys who were out in a boat, on the Delaware, fishing, found a good feather bed floating in the water; they drew it to the land and took it home. Finding no owner for it, the family made use of it. The consequence was, that five or six of the family lost their lives by it.

In the year 1798, Melancton Smith, and another man whose name I do not recollect, were the two first instances of the yellow fever in New-York. They had both been on board the ship Fame, as she came up, and I believe, both died. This same vessel went up to the New-Slip, in the East River, where she unloaded her ballast, and emptied her bilge water. The stench occasioned thereby was so intolerable, that, the wind being south, the inhabitants on the north side of the dock had to shut up their doors and windows, and some of them left their houses. To my knowledge, as many as twelve or fifteen died in that neighbourhood in the course of two weeks, several of whose funerals I attended. This same vessel was afterwards removed to a dock in the vicinity of the coffee-house; there several persons who wrought on board of her, who resided in Eden's alley, took the fever and carried it up into that part. Just at this time there was a very heavy rain, which filled most of the cellars in the lower part of the city. The fever raged with alarming violence on Golden Hill. It assumed the appearance of the plague. Many, and among others, Doctor Foster, minister of the Baptist church, fell a sacrifice to it.

A great handle was made of a case which occurred in Barclay-street, by the advocates for the internal origin of the fever, to establish their hypothesis. The case was this; the fever broke out in a boarding house in that street, and spread to the neighbourhood on the same side of the street. It was alleged that it had originated in that place: but Benjamin Egbert told me that a carman stated to him, that whilst he carted away sugar from a vessel which lay at Rylander's wharf, the man who kept this boarding house came to the vessel and asked for the clothes of a man who had died on board; upon which a bundle of clothes was brought. He asked if they thought there was any danger in taking them; they told him they believed not, as they had been sprinkled with vinegar. He took them, and in a few days five or six persons were taken down with the fever in his house. My informant added, that in a few days after, this same carman took sick also and died.

I mentioned to you further, that in a conversation which I had with Dr. Dwight some time before, I found that we perfectly agreed in opinion respecting the origin of the yellow fever, and that he told me the physicians in New-Haven had no doubt on that subject. He mentioned two cases which had for a time occasioned some perplexity. A man who arrived from sea, sick, was brought to a house in town, where he died. A short time after, a woman who lived in the street back from this house, also sickened and died. The difficulty was, to account for the sickness and death of this woman, as there was the length of the two lots between the two houses; as she was not known to have had any communication with the house in which the man died; as none of the family in which the man died had been taken sick, and as both were allowed to be decided cases of the yellow fever. But, on investigation, it was found that the women of these two houses had in the mean time met at the partition fence between the lots, and conversed together for some time, and that during the conversation, the woman who afterwards died, had leaned on the bed on which the man had died, and which had been hung over the fence.

The other case was that of a girl twelve or thirteen years old, who took the fever, and living in a remote part of the town, was not known to have been in any place where she was likely to take it. A short time, however, before she died, she mentioned that she had contracted her illness from some trunk or chest. "It was that (said she) that made me sick." Upon inquiry, it was found that she had been down upon the dock, where a trunk, or chest, containing the clothes of a man who died at sea, or in the West Indies, was opened. I think the doctor added that several others died of the fever who appeared to have taken it from the said clothes, and particularly the woman who washed them. Of these facts which I have stated, and perhaps of others, you may obtain more particular information by writing to Dr. Dwight* himself.

With best respects,
I am, dear Sir,
Yours sincerely,
DR. HOSACK. JOHN M'KNIGHT.

IV.

BIOGRAPHICAL SKETCH *of the Life and Character of the Rev.* MYLES COOPER, D. D. LL. D. *second President of Columbia College, &c.*

(With an engraving, by Leney.)

MYLES COOPER, D. D. LL. D. second president of King's (now Columbia) college, was born in England, in 1735. He was educated at Oxford, where he took the degree of master of arts, in 1760, and was soon after chosen to a fellowship in Queen's college. In the following year, he published an octavo volume of miscellaneous poems, which, however, appears to have been printed two or three years before its publication; as he observes, in his preface, that the greater part of the volume "was not only written, but actually printed off before the author had seen the age of twenty-four." This collection consists chiefly of occasional poems, grave and gay; pastorals, classical imitations, and versifications of select passages of Ossian. It bears, however, no very strong marks of original poetic genius. The author, like many other young men of extensive classical and belles-lettres acquirement, appears to have mistaken taste for talent; and a quick sensibility to the beauties of classical composi-

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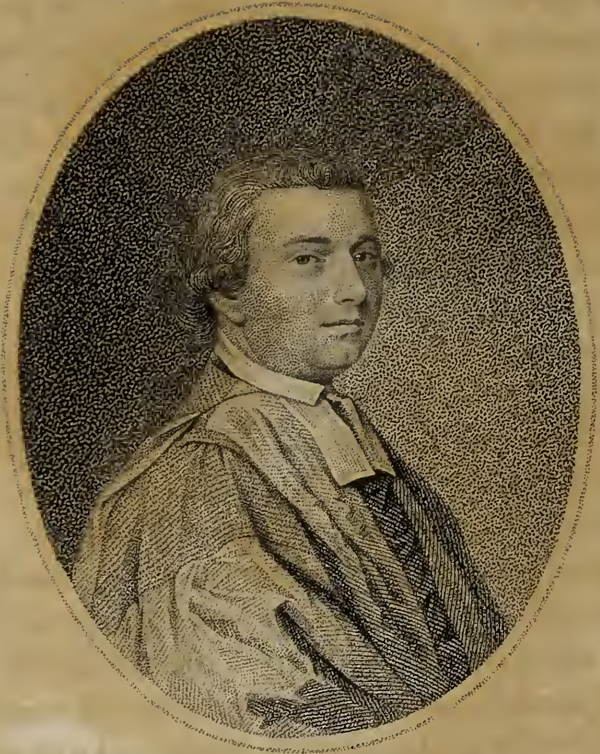
* President Dwight has kindly promised attention to this subject.—*Ed*



MYLES COOPER D.D. L.L.D.

Second President of Columbia College.

For the Med. and Phil. Register.

tion, for the warmth of a poetic fancy. Hence, his poems are filled with traditionary images, and common-place mythological allusions; his wit is borrowed from Martial; and his pastorals are faint reflections of the rural scenes of Virgil, Spenser, and Pope. But his taste is correct, his versification pleasing, his command of language extensive, and his preface is written with an ease and sprightliness, which denote a mind capable of much higher things. It is not, however, to be wondered at, that his poems have shared the fate of those of many a noble and learned predecessor; and after their little day of popularity, while they *circulated in manuscript*, or were publishing by subscription, now rest undisturbed and forgotten. His reputation, as a scholar, stood so well in the university, that in 1762, when President Johnson applied to his friend Archbishop Secker, to select from one of the universities, a person qualified to assist him in the college of New-York, and in a short time to succeed him as president; that venerable and learned prelate, after much inquiry, was induced to recommend Mr. Cooper, as, in every point, fully qualified for that important station.

Mr. Cooper, after receiving priest's orders in the church of England, came over to this country about the close of 1762. Here he was welcomed with great affection by Dr. Johnson, and was immediately appointed professor of moral philosophy. The duties of this office he discharged with so much ability, that the president, who had for some time wished to retire from active life, and had only been restrained from it, by his zeal for the interests of the college, now considered himself at liberty to follow the bent of his inclination; and resigned his office, with the fullest confidence, to Mr. Cooper, who was elected President, in May, 1763, in the twenty-eighth year of his age.

The faculty of arts, then, consisted of the president; Dr.

Samuel Clossy,* an Irish physician, of very respectable attainments, who was appointed professor of natural philosophy; Mr. Harper, the professor of mathematics; and Mr. Cushing, the classical tutor; who were considered as forming the ablest body of instructors, at that time, in the colonies. Mr. Cooper soon after received the degree of D. D. and the college continued to prosper, under his direction, until the commencement of those troubles which preceded the revolution, in 1773-4. Dr. Cooper then took the side of government very warmly; and distinguished himself, as a writer, in all the political controversies of the day. Many of his pieces are marked by great strength and elegance of style, as well as by a boldness of sarcasm and severity of satire, which have seldom been surpassed. In one of these literary skirmishes, he is said to have been met and worsted, by an anonymous whig antagonist; whom he soon after discovered, in the person of one of his own pupils, Alexander Hamilton (afterwards Gen. Alexander Hamilton) then a student at the college of New-York. It would be injustice to the memory of Dr. Cooper, not to add, that far from betraying any thing like mortification or resentment, he uniformly treated his youthful antagonist with good humour, and even respect.

His writings and conversation soon attracted the popular indignation; and he was obliged to fly from the college to escape the fury of a mob. In 1776, he returned to England, and resided for some time at Oxford ; where, in 1777, he preached a sermon before the university, " on the origin of civil government," which was published in quarto, and gave rise to some controversy on the points in dispute, between the whig and tory parties of that day. He was afterwards minister of the first episcopal chapel at Edinburgh, where he officiated, to a very respectable congregation, until his death, in 1785.

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* Dr. Clossy had, previous to his arrival in America, attained a high degree of eminence in the medical profession, both as a practitioner, and as the author of an interesting volume on morbid anatomy, entitled, "Observations on some of the diseases of the human body; chiefly taken from the dissections of morbid bodies," published in London, in 1763. Upon the organization of the first medical school in New-York, in 1768, he was chosen the professor of anatomy; and, in conjunction with Bard, Middleton, Jones, and Tennent, successfully directed his labours to the establishment of that institution. See the Register, vol. ii. p. 230.

Dr. Cooper was a thorough bred Oxford scholar, with all the learning, and all the favourite opinions of that ancient seat of loyalty and literature. His moral character was without reproach ; but the more precise were sometimes offended, by the freedom and conviviality of his habits. One of the peculiarities of his conversation has been preserved, by a rival wit of the same period :

> And lo ! a mitre, now, is spread,
> O'er *punster* Cooper's reverend head.
>
> M'FINGAL.

The college over which he presided, was broken up by the tumults and confusion of the revolutionary war. The course of instruction was suspended, the professors and students scattered, the building converted into a military hospital, and the valuable library pilfered and dispersed.*

This state of things continued, till 1784, when the college was re-organized, under the name of Columbia college ; and William Samuel Johnson, Esq. son of the first president, and a gentleman, in every respect, qualified for so important a station, was chosen to preside over it.

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* This library formerly contained, besides the collections left by Mr. Murray and Dr. Bristowe, some very splendid presents of the Earl of Bute, and a donation from the University of Oxford, of a copy of every work which had been printed at the university press.

V.

OBSERVATIONS *on the* SURGERY *of the* ANCIENTS, *vindicating their claims to many of the reputed discoveries and improvements of modern times : delivered as an Introductory Discourse to a course of Lectures on Surgery and Midwifery.* *By* DAVID HOSACK, M. D. *Professor of the Theory and Practice of Physic and Clinical Medicine in the University of the State of New-York.*

To those in pursuit of knowledge, it is no less interesting to observe the rise and fall of the empire of learning than of states.

In like manner, introductory to a course of lessons upon any art or science, we are naturally led to inquire into the first beginnings or sources whence it arose, and to trace its progress as it advances to perfection.

Introductory to the other parts of the course, I therefore propose, at this time, to call your attention to the most important facts which the history of surgery presents ; more especially, as it was practised among the Greeks and Romans : we shall thence learn that the writings of the ancients have not only given origin to most modern improvements, but that very many of them that have been claimed as original inventions, if they have not been copied, are, at least, anticipated in these fruitful sources of instruction.

In the early ages of society, external accidents constituted the greatest evils to which man was exposed. Intemperance, luxury, and the refinements of civilized life, had not then impaired his bodily constitution, nor debauched his mind. He passed his days in the exercise which was necessary to procure the means of his subsistence, and devoted his nights to rest, undisturbed by care, or those anxieties which at present occupy the civilized portion of the human race.

Man, in a state of nature, was therefore subject to, comparatively, but few diseases; though he was probably not less exposed to the common casualties of life than at the present day. In climbing the tree to procure its fruits; in traversing the forest, he was necessarily exposed to ordinary accidents; his attention, therefore, would be first directed to the discovery of such remedies as were calculated to remove the evils thus induced. To restore to its socket the dislocated bone, or to replace it when broken; to heal the wounds inflicted by the beast of the field, or the venomous serpent, must necessarily have been among the first objects of his attention. Accordingly, it is observed by Celsus and other ancient writers, that surgery was cultivated before any other branch of medicine.

The first writers upon physic trace the origin of their art, in common with all other branches of knowledge, to the Egyptians. But the history of surgery, as practised by that people, is so involved in fable, so blended with the pagan mythology, that, notwithstanding the labours of Prosper Alpinus, it is impossible to ascertain their knowledge of medicine, or of any other branch of science. The operations of surgery, stated by the professor of Padua, as having been performed by the Egyptians, namely, the extraction of the stone from the bladder; bleeding in the veins and arteries; the application of the actual cautery, and the paracentesis of the abdomen, in dropsy, must probably have been the operations of the modern and not of the ancient Egyptians.

Let us, therefore, pass over the stories of Hermes and the Egyptian Æsculapius; the fabulous accounts of Osiris, Serapis, Isis, Horus, and Thonis, who were reputed the first practitioners in medicine, and ranked among their divinities.

to the more authentic history of the surgery of the Greeks, as related by Homer and Hippocrates.

The first Greek surgeons, on record, are Æsculapius and his sons Machaon and Podalirius. Æsculapius flourished about fifty years before the Trojan war; in that war his two sons distinguished themselves, not only by their valour, but by their skill in curing wounds.

In the Iliad, Machaon is spoken of as one of the most distinguished surgeons at the siege of Troy. He is called the *preserver of the Greeks;* and when wounded by Paris, he is lamented, as deprived of the benefit of that skill which he had so often exercised for the benefit of others.

> " The great Machaon, wounded in his tent,
> " Now wants that succour which so oft he lent.*

On another occasion, Homer shows the high estimation in which the profession was held :—

> " A wise physician, skilled our wounds to heal,
> " Is more than armies to the public weal."†

Of Podalirius too, it is said, that on his return from the destruction of Troy, he was driven upon the coast of Caria, and that he cured the daughter of Damæthus of a severe and dangerous illness, by bleeding her in both arms. This is the first authentic record of the operation of blood-letting. It is also stated, as an evidence of the value attached to the profession, at that early day, that the prince, as a reward to Podalirius, for his skill and services, gave him his daughter in marriage, with half of his kingdom as her portion.

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* ———————— Μαχάων,
Τὸν μὲν ἐνὶ κλισίῃσιν ὀΐομαι ἕλκος ἔχοντα,
Χρηΐζοντα καὶ αὐτὸν ἀμύμονος ἰητῆρος,
Κεῖσθαι·

† Ἰατρὸς γὰρ ἀνὴρ πολλῶν ανταξιος ἄλλων,
Ἰούς τ᾽ ἐκτάμνειν, ἐπί τ᾽ ἤπια φάρμακα πάσσειν.

Notwithstanding these testimonies of the skill of Machaon and Podalirius, it appears that the practice was very much confined to the removal of the darts or arrows with which their wounds were inflicted, and afterwards to the application of fomentations and styptics to the wounded parts; for, when the heroes, recorded by Homer, were in other respects severely injured, as in the case of Æneas, whose thigh bone was broken by a stone thrown by Diomedes, he makes no mention of any other than supernatural means employed for their relief.

In the writings of Hippocrates, we have a full and circumstantial detail of the state of medicine and surgery among the Greeks in his time. He lived about 400 years before the birth of Christ; and was the first who treated of medicine in a regular or systematic manner. Prior to his time, even among the Greeks, the practice of medicine was confined to their priests and philosophers. According to Celsus, the healing art became united with the duties of religion, from the consideration, that diseases were inflicted upon mankind as punishments for their crimes; and were only to be averted or removed by the intercession of their priests, and the remedies they prescribed. The connection which exists between the study of medicine and the works of nature, also led their philosophers to unite the healing art with their favourite pursuits; and it is related of Pythagoras, that he travelled from place to place, not so much to teach the peculiar doctrines of his philosophy as to practise physic. Thales, Empedocles, Heraclitus, and Democritus, were among the most distinguished of the Grecian philosophers. They were also celebrated as eminent practitioners of medicine and surgery.

Such was the unsettled state of medicine, until the time of Hippocrates. In his hands it assumed the form of a distinct science, and was practised as a separate profession. By his labours it became enriched with his valuable and numerous observations on the symptoms, causes, and cure of diseases; and since his time, has been respected and cultivated, as among the most important of human pursuits.

Hippocrates not only rescued the profession from the hands of ignorance and superstition, but in his works he has left a legacy of great value to the surgeon, as well as to the physician; and although they are the writings of the most ancient author, whose pages are preserved, and written at a period, when the structure of the human body, and the functions of the animal economy, were but imperfectly understood; they are the writings of a master, and like the tablets whence he collected many of his observations, they deserve, even at this day, a place in the temple of science, where all can read and profit from the valuable truths they contain.

Among the surgical works of Hippocrates, are a treatise on *Wounds*, a book on *Ulcers*, another on *Fistulas*, a fourth on *Fractures*, and a fifth on *Dislocations*. His observations on abscess, ulcers, and wounds, show him to have been an accurate clinical observer. His work on the joints and dislocations, contain many practical remarks of great value on those subjects. His aphorisms contain principles which are received as so many axioms in physic and surgery; and, at this day, constitute the subjects of academic exercises in the most distinguished universities.

He performed the operation of bloodletting in different parts of the body; and although he did not understand the circulation of the blood, his observations on the effects of this evacuation, and the diseases in which it is most useful, are judicious and correct. In apoplexy, palsy, inflammatory diseases, iliac passion, quinsy, pleurisy, and inflammation of the abdominal viscera, &c. he made free use of this remedy. In quinsy, and in injuries occasioned by falls, he attached so much importance to bloodletting, that he, in some instances, bled his patient in *both arms*, and frequently *ad deliquium.*

In the treatment of fevers, he was no less cautious in the use of the lancet, than he was bold to employ it in those diseases in which it was decidedly indicated. At the same time that his ignorance of the circulation of the blood occasionally led him into error, the indications of bloodletting, and the circumstances in which it was most advantageously performed, did not escape his notice. The season of the year, the age of the patient, and habit of body, were no less regarded by Hippocrates than they are by physicians and surgeons of the present day. But he was not confined to the use of general bloodletting; he also made use of cupping and scarification for the removal of local diseases.

Hippocrates also performed many other operations, which at this time, notwithstanding the present improved state of anatomy, call for considerable skill and judgment in the operator.

He opened deep seated abscesses; he performed the operation of tapping in dropsy, and of trepanning in fractures of the skull and injuries of the brain. His aphorism upon the comparative pain and fever, before and after the formation of matter, and which he made the guide of his practice, abundantly shows his accurate knowledge of this subject. His observations on wounds of the head, teach us the great caution with which he formed his prognosis of the event. However small or inconsiderable the injury may appear, he observes, they require attention in their treatment, and care in the practitioner, not to hazard a hasty prognosis of the issue. This observation would do credit to the most enlightened surgeon of modern times; and cannot fail to impress us with an exalted opinion of the talents and experience of Hippocrates.

The *actual cautery* was also one of his favourite remedies, in the treatment of chronic diseases. In a case of ascites, he cauterized the belly eight times, during the forming state of this complaint. The physicians and surgeons of this day have yet to learn many valuable lessons from Hippocrates, and other ancient physicians, relative to the use of this remedy. The successful practice of Pouteau, of Lyons, (see his surgical essays) who has revived the use of this external application; and the advantages which have resulted from the use of caustics, as prescribed by Mr. Pott, in diseases of the spine, tend to establish the importance of the principle upon which the actual cautery was prescribed, and has been found useful.

Many other local applications were made use of in the practice of Hippocrates, that are still employed by the physicians and surgeons of this day.

In an inflammation of the throat, he caused his patients to inhale the steam arising from the infusion of stimulant and aromatic herbs: upon other occasions, he directed fomentations to be applied to the parts affected. The warm bath, fomentations, gargles, ointments, cataplasms, and collyria, were also among the local remedies prescribed by this celebrated physician.

The important operation of lithotomy appears, also, to have been performed in the time of Hippocrates; for, in the oath administered to his pupils, he exacts from them the obligation, that they *would not cut for the stone.*

Although the operation, as performed by the surgeons of that day, was apparently simple, compared with the present lateral operation; still, from their imperfect knowledge of the structure of the human frame, it must necessarily have been attended with considerable danger. Even, as improved at this time, it is an operation frequently productive of dangerous consequences; and, in some instances, proves fatal in the hands of the most skilful surgeon. The conduct of Hippocrates, therefore, in prohibiting his pupils from performing so important an operation, at the time the anatomy of the body was imperfectly understood, must give us a high opinion of the correctness of his judgment and his prudence; at the same time, that it attaches an additional value to his works.

Such was the state of surgery, in the days of Hippocrates: after a life spent in the duties of his profession, to which he devoted himself, with unwearied industry, he died, in the 101st year of his age; but in his works, he still lives.

In the interval of time, between Hippocrates and Celsus, many surgeons are recorded, by Galen and other historians: but as they appear to have made but few and inconsiderable improvements in the art, we will pass over this period, to the Augustan age; which may also be denominated the Augustan age of medicine, as well as of science. Such it was rendered by Celsus, the Roman Hippocrates.

Celsus was not only distinguished for his professional acquirements, but ranks among the most celebrated writers of antiquity. Whoever, therefore, wishes to become acquainted with the state of medicine and surgery, prior to the fall of the Roman empire, or to read the Latin language, which, in that day, attained its greatest purity and elegance, will peruse his valuable pages; which have gone through almost innumerable editions, and have been translated into almost every language employed as the vehicle of learning. Celsus not only exhibits an historical view of the state of medicine, as practised before his time, but has added much original observation, and many improvements to those of his predecessors. Although he has copied much from the writings of Hippocrates, he was not so blindly attached to his works, as not to discriminate between his merits and his defects. On the contrary, while he gave the opinions and practice of others, he thought for himself. His works are accordingly esteemed the most valuable repository of the medical learning of his time. He treats of the healing art, in all its branches of *diet*, *medicine*, and *surgery*. His seventh and eighth books are exclusively devoted to the latter subject, and contain a systematic view of most of the diseases and operations which fall to the province of the surgeon.

In his observations on *wounds*, *abscesses*, and *ulcers*, he describes the various appearances they assume, and adapts his remedies to the different stages, with as much correctness as is done by the surgeons of this day. To wounds, accompanied with hemorrhage, he applied constant pressure, by means of a sponge, wet with vinegar. If necessary, he applied the ligature to the bleeding vessel, or closed its orifice, by the actual cautery. When attended with inflammation, he enjoined abstinence upon the patient, and covered the part affected with cold applications. In *contusions*, he freely opened the bruised part, or dilated the wound for the evacuation of the blood effused, when there was no danger of injuring the larger blood-vessels, or important nerves. In gangrene, occurring in the extremities, he cut down to the sound parts; and if he failed, by that and other efforts, to conquer the disease, he recommended the amputation of the limb. To promote the suppuration of abscesses, he employed poultices, composed of barley, meal, marsh mallows, or linseed and fenugreek; but when opened, he prescribes stimulant food and drinks, and to the parts he applied honey and other digestives. When the lips of the wound became callous, its surface spongy and insensible, and the discharge of an unhealthy appearance, he washed the wound and the surrounding parts with *wine*. From this practice of Celsus, the surgeons of the present day may learn an important lesson in the treatment of wounds. He also describes the symptoms of that dangerous abscess, the *carbuncle*, and advises the actual cautery to corrode the gangrened part. This practice is now superceded by the internal and external use of the peruvian bark, and other stimulants. In erysipelas, he applied cerussa, with the juice of *solanum*, a powerful sedative. In the treatment of the callous ulcer, he removed the hard edges with the knife, or corrosive applications. In cancers, and in the cancerous ulcer, he prescribed the auripigmentum or arsenic. In fistulous ulcers, if tortuous in their course, with the probe as his guide, he ascertained their direction ; divided them freely with the knife ; and, upon exposing their internal surface to view, he removed the callous portions, and applied such dressings as were calculated to promote the growth of new parts. In other instances, he effected a cure, by the use of stimulant and corrosive injections. In caries of the bones, he directs them to be perforated as deep as the disease extends, and afterwards a hot iron to be passed into the foramina, made by the perforator, for the purpose of drying and separating the diseased portions : but if the caries and blackness extend through the body of the bone, he advises a total separation of the part affected.

In his chapter on tumours, he described them according to the nature of their contents, and advises their extirpation .The *steatomatous* tumour, from the firmness of its consistence, he directs to be carefully separated from the skin and surrounding parts, and to be removed entire, without dividing the sac inclosing it. He then directs the lips of the wound to be brought together, and an application made to agglutinate the divided parts ; at the same time, making use of wine and other external stimulants, to promote their union. In this treatment, we see the improvements of the present time, of *saving skin*, and *healing by first intention*. That this was the object of Celsus, appears evident, from a subsequent direction which he gives, in case any portion of the sac should be left behind, as in the removal of the melicerous or atheromatous tumour; in which case, he orders the wound to be left open, and digestives to be applied, for the purpose of throwing off the remaining portion of the sac. In the atheroma of the eye-lids, in which the sac adheres very slightly to the surrounding parts, he directs the teguments to be divided, without wounding the sac, and the tumour to be removed by the fingers, without further dissection; for, he adds, it easily separates. The same mode of treatment you will find recommended in the work of Mr. Hey, as a valuable improvement of the present time. In his chapter, on diseases of the eyes, Celsus treats of the *cataract*, and directs it to be depressed by the needle; and if it rises again, to be broken into pieces; the practice recently adopted by the most eminent surgeons. In *ophthalmia*, he prescribes venesection, purgatives, abstinence, low diet, rest, and a dark room. He washes the eye with collyria, composed of an infusion of roses and the poppy. When attended with defluxion, he employs astringents, cupping, and the actual cautery, to the temple and forehead, analogous in its affects to blisters and issues, as at present prescribed, under similar circumstances.

Celsus also performed the operation of the hare-lip. He extirpated the polypus from the nose; he removed, by excision, the enlarged and indurated tonsils; he diminished the elongated uvula; and he removed the bronchocele, by caustics and the knife. But the skill of Celsus was not confined to the smaller operations of surgery.

In diseases of the bones of the head, and in injuries of the brain, his practice was such as the most eminent surgeons of the present day must approve. The symptoms which are occasioned by a fracture of the skull, are minutely detailed. He is the first who notices the rupture of the vessels of the brain, and the other effects produced by a concussion without fracture of the cranium. He also observes, that the evidence of such injury, is generally a pain immediately above the part affected; and, upon exposing the bone to view, he adds, it is found of a *pale colour*. This characteristic symptom of effusion of blood, or of the formation of matter between the cranium and the membranes of the brain, you will find contained in the works of Mr. Pott; but without the credit due to that accurate observer. In cases of this sort, and in fractures of the skull, it was the practice of Celsus to make a free crucial incision of the integuments; by which, alone, in many instances, the patient was relieved. At the same time, he condemns the precipitate conduct of his predecessors, in proceeding to the use of the trepan, without waiting to observe the effects of other remedies.

The practice of Celsus is, at present, pursued under similar circumstances, by that celebrated surgeon, Mr. Abernethy, of Bartholomew's hospital; who has, in numerous cases, dispensed with the trephine, having relieved his patient by the application of other remedies. But if the symptoms became more formidable, and the patient experienced no benefit from the first operation, Celsus then directed such portions of the bone to be removed, as the extent of the injury appeared to require. In those cases, where the fracture or depression was small, he employed the instrument called the *modiolus*; which, in its construction, is similar to the trephine. But when the fracture was extensive, or of an irregular shape, he made use of a perforator, so as to surround the part affected with holes; and afterwards employed the chisel and mallet to cut out the portion of bone inclosed within them. In this operation, large portions were removed, which the modiolus could not cover, unless frequently applied. Mr. Hey, of Leeds, has lately introduced a substitute for the trephine; by which the same advantages are obtained, as by the perforator and chisel of Celsus.

As anatomy, in those days, was very imperfectly understood, we cannot be surprised that Celsus was less successful in some of the more complicated operations of surgery. Accordingly, in reducing strangulated hernia, he experienced great embarrassment: but it is to be recollected, that this operation requires an accurate knowledge of the structure of the parts concerned, to guide the knife of the operator. This knowledge has only been acquired within a few years. In the hands of John and Charles Bell, Mr. Astley Cooper, of London, and Mr. Hey, of Leeds, this operation has received its best and most important improvements. But in the history given by Celsus, of the symptoms and causes of hernia, and of the nature of its contents, he is no less perspicuous than upon most other subjects that came under his notice. He describes, with great accuracy, most of the species of hernia, now found in books of surgery, except such as occur under Poupart's ligament, and that which takes place between the abdominal muscles. The umbilical hernia he distinguishes into the omental and intestinal, according as the omentum or intestine is contained in the hernial sac. In like manner, he describes the scrotal hernia, as containing omentum, intestine, or both combined, with the symptoms which characterize each species.

He also distinguishes scrotal rupture, as it occurs in the young child, and in the adult. In the former, he directs a compress to be applied to the part, and retained by means of a roller; by which application, he observes, the intestine is oftentimes forced in, and the coats agglutinated: but in the adult, when the intestine is protruded in a large quantity, and attended with symptoms of danger, it appears that he was unacquainted with the mode of replacing it within the abdomen. He observes, it can only be reduced as far as the groin; thereby producing a change, but not a termination of the disease: and in those cases, where he considered an operation necessary, he did not restore the displaced intestine, but by means of a ligature or the knife, he diminished the quantity of loose skin, and by the inflammation and thickening of the parts induced, formed a cicatrix, which was calculated to prevent an increase of the prolapsus. Upon the same principle, in umbilical hernia, when the parts protruded were restored to their natural situation, he excited inflammation by ligature and caustics; which so changed the structure of the parts, as to prevent a return of the rupture. Thus far his operation was successful; but in some instances, from want of anatomical knowledge, he considered it necessary to remove parts which have no connection with the disease. In hernia of the intestine, he sometimes removed not only a portion of the hernial sac, but also extirpated the testicle itself.

In hernia of the omentum, if small, he replaced it by the hand alone; and to prevent it from being again protruded, he applied a compress to the part, and secured it by a bandage passed round the loins: but if large, he did not attempt to reduce it. He then, to effect a separation of the mortified parts, made use of escharotics or ligatures, preferring them to the scissors or knife, on account of the hemorrhage which attends the use of cutting instruments. The same observation is made, and a similar practice adopted by Mr. Hey, of Leeds.

Celsus also performed many other operations in diseases of the abdomen and pelvis, including the organs of generation. In wounds of the intestines, he performed the operation of gastroraphy; and his description of the mode of performing it, corresponds with the directions given by the best writers of the present time. In the treatment of dropsy, he performed the operation of tapping, not only on the side of the belly, but, in some instances, he perforated the navel; which is considered, at this day, as the latest improvement in the manner of performing paracentesis. The hydrocele, circocele, and the inflammation of the testicle, are also well characterised by this accurate observer. He cured hydrocele by incision. The varix of the spermatic cord, as well as the varices of the veins of the legs, he cured by laying bare the vein thus enlarged, and by applying the actual cautery; or removed it by excision, having previously separated the vein, and inclosed it with ligatures, above and below the part to be removed. He divided the prepuce in phymosis; he introduced the catheter in retention of urine, both in males and females. Celsus also performed the important operation of lithotomy; but considered it as attended with great danger. He very judiciously prepared his patient for this, as for every other capital operation, by abstinence from solid food and stimulating drinks. His mode of operating, was, in some respects, peculiar to himself; and was hence denominated *lithotomia Celsiana*; but, in most circumstances, it agreed with that afterwards adopted by Paulus Ægineta, and others, by the apparatus minor, or cutting on the gripe. When the operation was finished, he bled his patient, enjoined abstinence, made use of a warm bath, and oily fomentations, to diminish inflammation: but he advised the operation to be performed only in the spring of the year, and confined it to patients between nine and fourteen years of age.

These facts teach us, that Celsus was not sufficiently acquainted with anatomy to perform this operation, without great hazard to the patient. At this we cannot be surprised, when we recollect that it is only within a few years that it has been performed with general success. Our only surprise should be, that the art of surgery was so well understood as it appears to have been in his day. Among other operations, he extracted the dead fœtus from the womb, by means of the crotchet; and when difficulty presented, he divided the child, and removed it piece-meal. To restrain hemorrhage, or to remove any inflammation, induced by the operation, he applied soft cloths, wet with an infusion of vinegar and roses. Condylomata (or tubercles of the anus) and hemorrhoidal tumours, he removed with the knife and ligatures. The same treatment you will find adopted and recommended by Mr. Ware, in his valuable essay on that subject; but which contains no reference to the practice of Celsus. Fistula in ano, he also cured by ligature, making use of a linen thread instead of the leaden wire, employed by the moderns. This mode of treating fistula, was revived by Foubert, and has been frequently practised in France since that time. Professor Camper has also made use of ligatures, in those whom he found fearful of the knife; or when the patient could not submit to the necessary confinement which the incision requires. But the great inconvenience which arises from the long continued irritation of the ligature, and the prolapsus ani, which it sometimes produces, have occasioned it to be laid aside.

Celsus was no less successful in the treatment of fractures and dislocations. His directions for reducing the fracture of the clavicle, and his treatment of fracture of the ribs, correspond with those contained in the present systems of surgery; and in fractures of the extremeties, although he did not employ the many tailed bandage, or place the broken limb in a flexed position, but confined it to the fracture box, he remarks, that the smaller bones were generally united between fourteen and twenty-one days; those of the leg and fore-arm, between twenty and thirty; and those of the arm and thigh-bone, between twenty-seven and forty days. Few surgeons of the present time, I believe, can boast of greater success.

An eminent modern physician, emphatically exhorts every person, in the study of medicine, to keep Celsus in his hands, by night and by day. I trust the outlines I have exhibited of his practice of surgery, and the evidences I have adduced of his skill in that art, will also induce the pupil in *surgery* to give his writings an attentive perusal.

Galen, the physician of the Emperor Marcus Aurelius, also holds a distinguished place in the history of surgery. He was born at Pergamus, a city of Asia, about 130 years after Christ, and during the reign of the Emperor Adrian. He was celebrated, not only as a practitioner in physic and surgery, but as the most accurate anatomist that had then appeared. His knowledge of anatomy, at the same time that it furnished him with more correct views of the functions of the human body, and of the general principles of surgery, also enabled him to perform some operations, unknown to his predecessors. By some who profess to give an account of his works, he is considered as the mere commentator on the writings of Hippocrates; especially upon those subjects which relate to surgery. But although Galen selected every thing he considered valuable in the works of those who had gone before him, he has left the evidence of great original genius, not only as a physician, but as a practitioner of surgery. I may remark, that his writings, like those of Celsus, have been plundered by the moderns, without the least acknowledgment of the source whence they derived the materials of what they afterwards denominated discoveries and improvements.

Without going into a detail of the practice of Galen, I shall confine my remarks to a few of those subjects in which he appears to have added to the stock of knowledge he had received from his predecessors.

In his chapter on ulcers, he distinguishes their several species with so much correctness, that it has evidently been the basis of Mr. Benjamin Bell's treatise upon this subject. Not only the names by which they were designated, by Galen, are retained ; but even his definition of an ulcer has been adopted by our late systematic. " A solution of continuity, in any of the softer parts of the body," is the definition given of an ulcer by Mr. Bell. " Unitatis solutio est in carnosa parte," is the language of Galen. I may also add, that in the treatment of ulcers, there is scarcely what is called an improvement in the practice of the moderns that was not known to Galen. During the inflammatory stage of phlegmon, he carefully enjoined upon his patient to abstain from wine and stimulants generally. He also made use of the lancet, purgatives, and warm bathing, to diminish the inflammation ; but when the ulcer was formed, and a free discharge of matter obtained, he directs his remedies according to the character of the wound. In the simple purulent ulcer, his practice was to bring the edges as nearly as possible into contact. In the sordid ulcer, he made use of honey, verdigris, and terebinthinate applications, to change its condition, and to promote the growth of healthy parts. Oily dressings and relaxing cataplasms, he very properly proscribed as injurious in those cases. With the same view of restoring a healthy action in the part, he directs it to be washed with wine ; and, as an evidence that he had in view its stimulant qualities, he observes, that the Falernian, which was a sweet wine, was useless in this respect. " Nam quecunque dulcia pariter et fulva sunt, ut Falernum, ad id inutilia existunt."

But one of the most approved modes of treating ulcers, in the present day, is by bandage. This, also, was the practice of Galen ; and in his direction upon the application of the roller, he observes, it should not be so loose as to give no support to the limb, nor bound so tight as to excite pain by its pressure. "Circumductio etiam ipsa non ita laxa sit ut nihil efficiat nec ita vehemens ut dolorem premendo excitet." In punctures of the nerves, the practice of Galen was also original. If the wound be large, he advises it to be kept open; but if small, he directs it to be dilated, and terebinthinate and other stimulating dressings to be applied, for the purpose of obtaining a free discharge from the surface of the wound. "Ubi aliquis nervus est punctus, cutem ipsam servari oportet, aut quod tutius est latius incidere." In warm climates, the same practice is successfully pursued under similar circumstances, in the present day.

For the purpose of suppressing hemorrhage, when the external application of cold water and astringents failed, such as unripe galls, balaustines, and the stronger austere wines, it was the practice of Galen to raise the bleeding vessel, by means of a hook, and to secure it by a vinculum or ligature. Ambrose Paré, in the sixteenth century, therefore unjustly claimed the use of the ligature as his discovery.

The aneurismal tumour is also well characterized in the writings of this celebrated surgeon. From some expressions contained in his work, I am also induced to believe, that in the treatment of fractures, he placed the broken limb in a flexed position. It was certainly his practice, when the bones were secured by bandage, to place the limb in that situation which occasioned the least pain to his patient; and in the application of the bandage, he was aware of the inconvenience and injury arising from too severe pressure upon the part affected. To aid the generation of bony matter, in forming a callus, he also, as in wounds of the soft parts, made use of wines and other stimulating applications.

Two other writers of respectability, among the ancients, merit our attention, Ætius and Paulus Ægineta. I pass over the works of Oribasius, as they contain nothing important, but what is to be found in the writings of Galen.

Ætius flourished at the end of the fifth and beginning of the sixth century. He was born at Amida, in Mesopotamia, and was educated at the celebrated medical school of Alexandria. Although his works are not so well digested or arranged as those of Paulus, his chirurgical writings contain many valuable observations, not to be found in Celsus or Galen, and were even omitted by his successor, Paulus. His account of the diseases of the eyes, is much more minute and complete, than the chapter of Celsus upon the same subject. In the treatment of anasarca, he prescribes scarification of the extremities ; not merely for the purpose of a temporary evacuation of the water contained in the cellular membrane, as had been recommended by Hippocrates, but made his incisions so bold and extensive, that he thereby, according to his own observation, not only relieved his patient of anasarca, but frequently cured him of ascites. Sylvius de la Boe, afterwards proposed to perform this species of tapping, by means of a needle, and claimed the discovery as his own.

I have already remarked, that Hippocrates and Celsus made frequent use of caustics, especially in the treatment of dropsy, epilepsy, sciatica, and phthisis. Ætius also employed them, not only in the same complaints, but in many other diseases. In asthma, palsy, empyema, and affections of the head ; in obstinate head-aches, or in injuries of the brain, he applied them to the nape of the neck, and to different parts of the head. He directed them to be long continued, to be applied in great numbers, and made of a circular shape, that they might be slow to heal, and thereby afford a large discharge. In the bite of a mad dog, he directed them to be kept open forty or sixty days ; and if, in that time, they should, by accident, be closed, he renewed their application. In this free use of caustics, he was followed by Paulus. The issues, as employed at this day, are found useful in the same diseases, for which the caustics were so successfully applied by the ancients. It is said by some, that the use of the *seton* was known to Ætius : this does not appear. Roland, of the tenth century, was the first who described this species of issue. It was afterwards spoken of by Rhazes and Albucasis, as much in use in their day. Dr. Freind remarks, that whoever reads the chapter of Rhazes on this subject, will find that the ancients understood the value of this remedy as well as the moderns.

Ætius also treated of the diseases of women. He notices the causes of difficult labour, and directs the mode of delivery, which should accordingly be pursued. In one respect, his work is imperfect ; as he takes no notice of an important branch of surgery, fractures and dislocations.

Paulus Ægineta, so called from his birth-place, the island Ægina, flourished about the middle of the seventh century. He also was a pupil of the Alexandrian school. After finishing his education, he travelled into different countries, and thereby had more extensive opportunities of becoming acquainted with diseases than most of those who had preceded him. His works, accordingly, contain much original matter. His chirurgical writings, in which he devoted a book exclusively to the operations of surgery, have been universally considered as more complete than any that appeared before the revival of learning in the fifteenth century. It is sufficient evidence of the value of the works of Paulus, that his writings, with those of Celsus, became the text books of Fabricius, a celebrated surgeon of the sixteenth century.

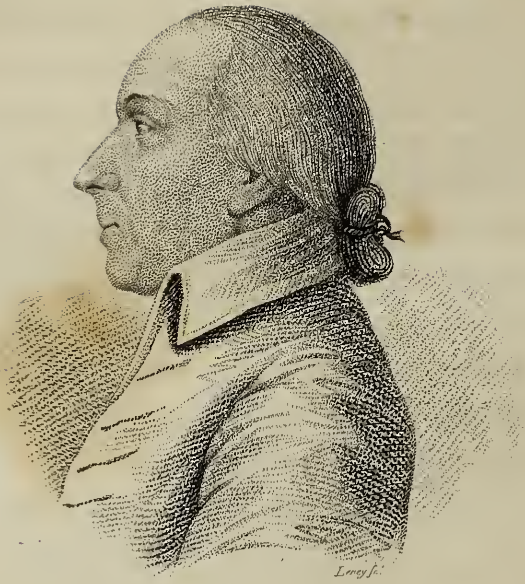
In his treatise on ruptures, the different species of hernia are more minutely detailed, and the operation more circumstantially described than by Celsus. That species of aneurism, arising from a wound or rupture of an artery, which was known to Galen, he describes with great accuracy, as well as the circumstances by which it is distinguished from other tumours. This is not all. In the treatment of the disease, he performed the operation for its removal, in the same manner as is done at this day, by securing the vessel above and below the part affected, and dividing it between the ligatures. He also describes the fracture of the patella, which was not noticed before his time. In chronic affections of the head, and in diseases of the eyes, he opened the jugular veins; and, in some instances, the arteries behind the ears. To render the operation of cupping more effectual, he improved the scarificator in such manner as to make several incisions at the same time. In cases of quinsy, threatening suffocation, he performed the operation of bronchotomy. He directs it to be performed about the third or fourth ring of the trachea, being a part which he observes is less covered with flesh, and where there is the least danger of dividing many vessels. He is also careful not to make the aperture larger than is sufficient for the purpose of respiration. In this operation, Albucasis afterwards copied Paulus, without an acknowledgment.

Paulus also improved much upon his predecessors, in the manner of performing some of the more usual operations of surgery. In extracting the stone from the bladder, he did not, like Celsus, confine the operation to childhood, but performed it at any period of life. He also directs the incision to be made, not in the middle of the perineum, as was done by Celsus, but upon the left side of it, nearly where the incision for the lateral operation is at this day made. Upon this subject, he also gives another important direction; to make the external incision free and large, by which both the sufferings of the patient and the danger of the operation are diminished. Paulus also treats of the diseases of pregnancy, and was skilled in the practice of midwifery.

Such was the state of surgery among the ancients; and from the progress they had made, much also was to be expected from the labours of their successors: but a long interval of ignorance and darkness now ensues.

The civilized parts of Asia and Africa were overrun by the Saracens, under Mahomet and his successors. Being, from their religious tenets, the professed enemies to all knowledge not contained in the Koran, they ordered the celebrated library of Alexandria to be destroyed; and with it all the liberal arts had nearly perished.

About the same period, the Goths and Vandals overran the Roman empire. They also were the enemies of science, because they were strangers to it. But after the fury of the Saracens had somewhat subsided, the love of health and life, which is natural to man, induced them to revive the healing art; which had, in a great degree, shared the general fate of learning. The works of Hippocrates and Galen were sought for, and translated first into the Syrian, and thence into the Arabian language: in a few centuries, the Mahomedan governments abounded in schools of physic. Although the works of the most celebrated Greek and Roman writers were transcribed by the Arabian physicians, Rhazes and Avicenna, the science of medicine received little improvement from their hands. In like manner, the knowledge of surgery, among the Arabians, was preserved, but not improved. The precept of Mahomet, which forbad the opening of dead bodies, must necessarily have prevented improvements in anatomy, and consequently retarded their progress in the practice of surgery. Notwithstanding the labours of Rhazes, Avicenna, Albucasis, and other eminent practitioners and teachers of medicine among the eastern nations, surgery received few or no additions, from the time of Paulus until the sixteenth century; when Fabricius, of Aquapendens, published his celebrated system, contain-



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ing, not only the surgery of the ancients, but many original observations, which may be perused with much interest, even at this day. Of Fabricius, Boerhaave observes, " ille superavit omnes ;" " omnibus potius quam hocce carere possumus."

Upon some future occasion, I propose to take a view of the progress of this art, from the revival of learning to the present period ; in which I shall enumerate the advantages which the practice of surgery has derived from the discovery of the circulation of the blood, and the subsequent improvements in anatomy and the other branches of the healing art.

VI.

Account of the Life and Character of the late John Jones, M. D. *formerly Professor of Surgery in King's (now Columbia) College, New-York, &c.**

(With an engraving, by Leney.)

John Jones, the subject of these memoirs, was a native of the state of New-York. He was born in the town of Jamaica, Long-Island, in the year 1729 ; and received his education partly from his excellent parents, but chiefly at a private school in the city of New-York. He was early led, both by the advice of his father and his own inclination, to the study of medicine, and was placed under the care of the late Dr. Thomas Cadwalader, of Philadelphia, with whom he continued during the period of his studies in this country.

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* With great pleasure we present our readers an account of the late *Dr. John Jones*, of New-York, a gentleman alike distinguished for his professional merit, urbanity of manners, and moral excellence. The narrative is extracted chiefly from the memoirs of his life, written as early as 1795, by his pupil, *Dr. James Mease*, of Philadelphia, who has kindly favoured the editors with a corrected copy for publication in the Register.—*Ed.*

At the age of eighteen years, he began to study medicine under the above-mentioned physician, and he always acknowledged, with pleasure and gratitude, the important instructions, both in physic and morals, which he derived, during the prosecution of his studies with that amiable man.* This country then afforded scarcely any opportunity by means of public institutions, for increasing the knowledge of the student; as none of those numerous establishments for the relief of the indigent sick then existed, which now do honour to a young, but enlightened country. The private practice of physicians, was almost the only source from whence the student could derive any practical information; and to this Dr. Jones paid the greatest attention.

After completing his studies in this country, young Jones visited Europe, in order to improve himself still further in his profession. He first went to London, and there attended the lectures of the celebrated Hunter, M'Kenzie, and others, who then shone eminent in the several branches which they taught; and the practice of the different hospitals, particularly that of St. Bartholomew, of which Mr. Pott was senior surgeon, and in the height of reputation. From London he went to France, where he arrived in May, 1751; and obtained the degree of doctor in medicine, from the university of Rheims: he then proceeded to Paris, where he remained until the month of April in the following year ; and attended the anatomical lectures of Mr. Petit, and the practice of the Hotel Dieu, of which well known institution, Messrs. Le Cat, and Le Dran, were then surgeons. He afterwards spent some time at the university of Leyden, and finally visited Edinburgh, which completed his medical tour.

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* This eminent physician was born in Philadelphia, and was the son of JOHN CADWALADER and Martha, the aunt of Dr. Jones. After finishing his studies in this country, which were conducted under the father of Dr. Jones, he completed his medical education in Europe, and settled in Philadelphia, where he practised medicine many years, with the most distinguished reputation. Upon the establishment of the Pennsylvania hospital, in the year 1752, he was elected one of its physicians, and was honoured by an annual re-election, until the time of his death, which was more than thirty years after the erection of that institution.

Under masters like these, and enjoying such opportunities, he could not fail, with the assiduity which he employed, of acquiring all the knowledge at that time to be obtained : in consequence of the zeal which he showed in the acquisition of every species of useful knowledge, he attracted the notice of the above celebrated surgeons, which was of essential benefit to him, in the prosecution of his studies : to Mr. Pott, in particular, he considered himself under peculiar obligations, for the marks of friendship he experienced from him, and which could not fail to inspire him with a love of his profession.

During the prosecution of his studies in Europe, Dr. Jones was industrious in collecting all the useful information in his power, especially upon those branches of science more immediately connected with his profession. To anatomy, as the hand-maid of surgery, and the basis of medical science, he paid the greatest attention, but he did not suffer this to engross the whole of his time : convinced of the intimate connection between the different branches of the profession, he considered the separation of them, not only as contrary to nature, but as highly detrimental to the progress of the science ; and therefore believed, that a knowledge of one part was indispensably requisite to a right understanding of the other.

Upon the return of Dr. Jones to this country, he settled in New-York ; where his abilities soon procured him extensive practice. To the profession of surgery, in particular, he devoted much attention: he was the first who performed the operation of lithotomy in that city, and succeeded so well in several cases that offered shortly after his return, that his fame, as an operator, became generally known, throughout the middle and eastern states of America. This operation had likewise been frequently attempted in the other states, but the want of success attending it, was generally so great, as to prevent it from being performed in future: the fortunate manner, however, in which those cases under his care succeeded, fully proved, that it was no longer the dangerous operation many had been made to apprehend, and which induced them rather to submit to a miserable life, than suffer the risque of falling a sacrifice to the means instituted for their relief.

About the year 1758, during the existence of a war between France and the then colonies, as a part of the British dominions, a considerable alarm was occasioned by the report of an intended attack of the enemy upon the frontiers of the state; and Dr. Jones, among others, entered as a volunteer surgeon to the troops raised upon the occasion, in which capacity he served with distinguished reputation, until the close of the campaign. It appears, that even the enemies of his country were acquainted with his abilities; for in a severe repulse which they suffered, from the American and British troops under Sir William Johnson, General D'Escaux, commander of the French, was dangerously wounded, and being taken prisoner, immediately placed himself under the care of Dr. Jones; who carefully attended him, for a considerable time, in New-York. At the close of the campaign, he again returned to private practice, with increased reputation. Some years after, upon the establishment of the Philosophical Society of Philadelphia, he was elected one of its first members: he likewise had the honour to serve it in capacity of curator, in the year 1786, after his removal from the former to the latter city.

Upon the institution of the medical school in the college of New-York, Dr. Jones was appointed professor of surgery ;* upon which branch, he gave several courses of lectures, and thereby diffused a taste for it among the students, and made known the improved modes of practice, lately adopted in Europe, of which most of the practitioners in the country were entirely unacquainted. He likewise endeavoured to instil into the minds of his pupils, the same just principles that guided his conduct, when prosecuting his own studies, and (melancholy experience proving the necessity of the caution) pointed out the necessity of regulating their conduct, as individuals, so as not to detract from their merit as professional men. Viewing the science in an enlarged and honourable light, as comprehending the most extensive view of our nature, and as tending to the alleviation and abridgment of human misery he taught his pupils to despise the servile conduct of those, who consider the profession as worthy of cultivation, only in proportion to the emoluments which it yields ; and to rely upon the solidity of their own endowments, as the best security of general esteem, and for the acquisition of business. He could, with propriety, recommend the pursuit of this conduct to others, having, in his own person, furnished an instance of its success, which deserves to be recorded, as a proof of the triumph of abilities over ignorance and pride.

For a considerable part of the previous life of Dr. Jones, he had been afflicted by the asthma, and for a long time had struggled to overcome that painful disease; but the exertions of both his own skill, and of the rest of his medical brethren, in most parts of the continent, had hitherto proved ineffectual towards even his relief. He determined, therefore, to take a voyage to Europe, and accordingly sailed for London. Here, in a thick smoke, and an atmosphere impregnated with every species of animal putrefaction and effluvia, where so many asthmatics have found such remarkable benefit, he also experienced a considerable alleviation of his complaint; and it is not improbable, that the permament alteration in his health which he afterwards enjoyed, may in some measure be attributed to the effects of his residence in London. He also employed himself during his continuance in the metropolis, in collecting subscriptions for a hospital in New-York, which he had been instrumental in establishing, and which, for convenience of structure and accommodation of the patients, was inferior to none in this country: all his trouble however, was of little avail, for shortly after its erection, it was entirely consumed by fire.

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* It is to be observed, that Dr. Jones was the professor of surgery in King's (now Columbia) college, when his talents were associated with those of Middleton, Clossy, and Dr. Samuel Bard ; a period when the medical school, attached to that institution, held a respectable and envied rank among the literary establishments of our country. ———————*fuit* Ilium———————.

Editors.

In London he again had an opportunity of seeing his friend Mr. Pott, at the head of his profession, and of renewing that attachment which had been previously commenced between them. He had now been for some years left to the guidance of his own judgment, but unlike many who suppose all knowledge to become stationary at the time of their leaving college, he was still willing to be taught by those who had formerly been his instructors, and who, from the greater opportunities they enjoyed, would be enabled to afford him much information. Eager for the acquisition of knowledge, whenever, and wherever it was to be obtained, he again attended the lectures of his old master Dr. Hunter, and those of his friend, Mr. Pott, who lost no opportunity of showing the consistency between his professions and proofs of respect: during his short stay in London, he paid Dr. Jones the most particular attention, and presented him with a complete copy of his lectures, just before his departure from that city. His kindness however did not end here, for in the frequent applications which he received for advice from all parts of this country, in difficult and important cases, he never failed to recommend his old pupil, as capable of affording any relief to be derived from surgical assistance. In consequence of this, his attendance was frequently desired in the different states; and while he showed by his skill and success, that the opinion which had been formed of him was just, his fame became thereby diffused throughout the continent of America.

The following year he returned to his native country, whose political situation at that time, called loudly for the exertions of all her citizens. He again resumed his lectures, and delivered several courses, and in the autumn of the next year (1775,) published his "*Plain Remarks upon Wounds and Fractures*,"* which he inscribed to his old preceptor, Dr. Cadwalader. Few presents could have been more acceptable to his country, or more opportunely made; for, in the then situation of American affairs, many persons were chosen to act as surgeons, who from their lamentable ignorance of the principles of their profession were but ill qualified for the office; and the performance of Dr. Jones, notwithstanding the publication of more systematic works, will still instruct, and afford valuable information to the student and practitioner of medicine.

The business of teaching, as well as of private practice, was soon after interrupted by the political commotions of his country. The British army having taken possession of New-York, and the adjacent country becoming the seat of war, Dr. Jones, with all the friends of the American cause, had previously left the city; and retired to some distance into the country. Fully convinced of the danger, with which the liberties of America were threatened, he did not consider it proper to remain a silent spectator of a contest carried on against a country that gave him birth, and to which he was attached by all the ties of veneration and love; he therefore accepted a seat in the senate of New-York, for the southern district, to which he was appointed by the convention chosen for the organization of the state government, in conjunction with other fellow citizens. When he could no longer be useful in his legislative capacity, he exerted his professional abilities, by entering the medical department of the army, where he rendered important services to his suffering fellow soldiers. But this highly satisfactory employment was of a short duration; for the natural delicacy of his constitution, ill comporting with the hardships of a military life, and the manifest injury his health had already received, rendered it necessary for him to return again to private practice. Accordingly, on the evacuation of the city of Philadelphia by the British troops, he went thither in the summer of 1778; and found that during a short stay there, he enjoyed so much freedom from the asthma, with which distressing complaint he had been long afflicted, that he determined to take up his future residence in that city. In the latter end, therefore, of the following year, or beginning of 1780, he removed to Philadelphia. The citizens of that city were not insensible of his merits; for the same success in practice as a professional man, and the same agreeable manners as a gentleman, which placed him so high in the esteem of his fellow-citizens at New-York, could not fail of attracting those of his new place of residence.

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* A new edition of this work was published in 1795, with memoirs of the life of the author, by Dr James Mease, a gentleman well known for his exertions in the cause of science.—*Ed.*

On the resignation of Dr. John Redman, as one of the physicians of the Pennsylvania hospital, in the year 1780, Dr. Jones was unanimously elected by the managers to fill the vacancy, and was continued therein, until the time of his death. The same year, he was elected first president of the humane society.

In the year 1787, the physicians of Philadelphia, influenced by the many advantages which have arisen in every country, from well conducted literary institutions, agreed to establish a college among themselves, for the advancement of the interests of medicine in general, but especially in this country; and elected Dr. Jones vice president; the chair of the college having been conferred upon Dr. Redman. To the first part of volume first of the Society's Transactions he communicated one of the most interesting papers, upon Anthrax. To the several offices above mentioned, Dr. Jones was honoured by an annual re-election until the time of his death.

Dr. Jones was not only the intimate friend, but also physician to Dr. Franklin, and attended him in the last illness, which deprived the world and his country of that philosopher. As it may not be unsatisfactory to know something of the manner in which so great a man conducted himself, when about to close his earthly scene and enter upon another, the existence of which he was falsely reported to have disbelieved, "I have preserved" says Dr. Mease, "the following short account of his last illness, drawn up by Dr. Jones, and published at the time:"

"The stone, with which he had been afflicted for several years, had for the last twelve months of his life, confined him chiefly to his bed; and during the extremely painful paroxysms, he was obliged to take large doses of laudanum to mitigate his tortures; still, in the intervals of pain, he not only amused himself by reading and conversing cheerfully with his family and a few friends who visited him, but was often employed in doing business of a public, as well as of a private nature, with various persons who waited upon him for that purpose; and in every instance, displayed not only the readiness and disposition to do good, which were the distinguishing characteristics of his life, but the fullest, and clearest possession of his uncommon abilities. He also not unfrequently indulged in those *jeux d'esprit*, and entertaining anecdotes, which were the delight of all who heard them.

"About sixteen days before his death, he was seized with a feverish disposition, without any particular symptoms attending it till the third or fourth day, when he complained of a pain in his left breast, which increased till it became extremely acute, attended by a cough and laborious breathing. During this state, when the severity of his pains, drew forth a groan of complaint, he would observe, that he was afraid he did not bear them as he ought; acknowledging his grateful sense of the many blessings he had received from the Supreme being, who had raised him from small and low beginnings, to such high rank and consideration among men: and made no doubt but that his present afflictions were kindly intended to wean him from a world in which he was no longer fit to act the part assigned him. In this frame of body and mind, he continued until five days before his death, when the pain and difficulty of breathing entirely left him, and his family were flattering themselves with the hopes of his recovery; but an imposthume which had formed in his lungs, suddenly burst, and discharged a quantity of matter, which he continued to throw up while he had power, but as that failed, the organs of respiration became gradually oppressed; a calm lethargic state succeeded; and on the 17th instant, (April, 1790) about eleven o'clock at night, he quietly expired, closing a long and useful life of eighty-four years and three months.

"It may not be amiss to add to the above account, that Dr. Franklin, in the year 1735, had a severe pleurisy, which terminated in an abscess of his lungs; and he was then almost suffocated by the quantity and suddenness of the discharge. A second attack, of a similar nature, happened some years after, from which he soon recovered; and did not appear to suffer any inconvenience in his respiration from these diseases."

At this time, when Dr. Jones was reaping the benefits of a long and steady pursuit of his profession, and happy in the possession of the highest confidence of his fellow citizens, death put a stop to his earthly career. In the month of June, 1791, he rode out on horseback, some miles from town, to visit his friend, Mr. Charles Thompson, secretary to congress, during the late war. The day was warm, and he was so fatigued by his excursion, that he did not entirely recover himself for several days. On the evening of the 17th, he paid a visit to the President of the United States; and previously to his return home, from being a very sultry day, the air became remarkably cool. He was dressed in a light manner, suitable to the weather, when he set out; but it was not sufficiently warm for the remarkable and sudden alteration in the temperature of the air that succeeded. Having some patients who required his attendance, he visited them before his return home; where he had no sooner arrived, than he felt himself much indisposed. The next morning he awoke, with considerable fever, attended by a diarrhœa, and great prostration of strength. He continued for four days in this situation, with but little alteration, passing almost sleepless nights. Upon the fifth day, he became considerably better; was able to sit up, and the most flattering prospects were entertained of a quick recovery: exhausted, however, by the violence of the disease, the want of sleep, and the conversation of his numerous friends, who had that day visited him, he retired early to bed in the evening, with a view, by the help of an anodyne, to procure some rest. This, however, was denied him, and he continued in a very restless and uneasy state the whole night ; during which time he had a violent return of his asthma. Early in the morning of the 23d, he felt some inclination to sleep, and desired to be left alone. His orders were, perhaps, too punctually obeyed. At eight o'clock, his servant entered his room, and observed him in a calm slumber ; he again visited him two hours after, when he found him in the same position, with his hand under his head, to all appearance, in a profound sleep, but, on approaching the bed, he perceived that he breathed no more. The quiet and easy manner of his death, and the apparent strength of body the preceding day, induced some of his brethren to hope that a suspension of animation only had taken place. The usual means of recovery were accordingly tried for some time, but all in vain ; the scene was finally closed. He died in the sixty-third year of his age.

The person of Dr. Jones was about the middle size ; his habit was thin, owing to his constant affliction with the asthma ; his eye was quick and penetrating ; his countenance cheerful, but sedate ; and his whole deportment easy and polite.

As a surgeon, Dr. Jones stood at the head of the profession in this country ; and he may be deservedly considered, as the chief instrument in effecting the remarkable revolution in that branch of the healing art, which is now so apparent, by laying aside the former complicated modes of practice, and substituting those which are plain and simple. The operation to which he principally confined himself, for many of the last years of his life, was that of lithotomy ; and his success in this difficult and important object of a surgeon's duty, was great indeed.

Connected with this part of his professional character, was his merit as an accoucheur ; and in this difficult and important branch, he was no less successful. During the prosecution of his studies in Europe, he paid particular attention to this subject ; and availed himself of every opportunity to become qualified to practise it, both by a strict attendance upon the various hospitals founded for this particular purpose, and upon the private practice of the different professors. In the lectures which he himself delivered in the college of New-York, he dwelt much upon this subject ; and he may justly be considered, as the first who gave the medical students of this state, a proper and rational notion of the art. Convinced that nature, or more properly speaking, the EXERTIONS of the SYSTEM, were, in the greatest number of instances, sufficient for its own necessities, he seldom had recourse to those artificial aids, by the frequent use of which, the lives of the subjects were formerly so often endangered.

The merit of Dr. Jones, as a physician, was likewise considerable. Though educated in the school of Boerhaave, he never professed an implicit faith in any particular system : he was guided by just general principles, and he varied his practice like every judicious physician, with the varying circumstances of the case. The success of his treatment, was the best proof of the truth of his principles, and of the judgment which directed their application. He lamented the imperfection of the science, and never refused the adoption of any rational means of increasing its certainty, or the use of any remedy, because it was new, which had been sanctioned by experience, and had reason and probability to recommend it : on the other hand, the caution with which he gave way to many much famed antidotes, whose short lived reputation proved their merit, marked him the safe and prudent practitioner.

REVIEW.

Art. I. *The* History *of* North-Carolina. *By* Hugh Williamson, M. D. LL. D. *Member of the Holland Society of Sciences, of the Society of Arts and Sciences of Utrecht, of the American Philosophical Society, &c.....* Philadelphia. T. Dobson. 8vo. vol. i. pp. 307. vol. ii. pp. 289. 1812.

Of the various departments of literature, to which the attention of American writers has been directed, there is none, we believe, which has been cultivated with so much assiduity and success as that of general history. Historical literature seldom keeps pace with the occurrence of events ; yet such is the industry of our countrymen, and the zeal which they have manifested for this species of knowledge, that they may justly boast of authentic details of most of the principal events connected with the first settlement and colonial history of their country ; of minute and elaborate narratives of the memorable occurrences in their revolution, and of copious accounts of the establishment of their constitution, and of other subsequent events in their annals. These accounts too, are, in not a few instances, furnished by individuals, contemporary with the events they narrate, and who bore a chief part in what they describe.

In the first class, of the authors who have related the circumstances attending our first settlements, may be particularly mentioned Hubbard the journalist, Prince the chronologist, and Cotton Mather the writer of the formidable *Magnalia ;* and our colonial history has been given by Stith, Beverly, Colden, Smith, Hutchinson, Belknap, Trumbull, Williams, Sullivan, and Minot. The momentous occurrences, which terminated in the establishment of American independence, have been faithfully recorded by Ramsey, Warren, Marshall, and Lee; and if the events subsequent to that period, have not been presented to the public with the same voluminous detail, it may be ascribed rather to their deficiency in popular interest than to any want of disposition in the American people to record them. These names, beside many others that might be added, form a catalogue highly respectable, in point of numbers, though unequal in point of merit.

But to proceed to the volumes before us. The author of the present work claimed our attention on a former occasion, by his interesting publication on the climate of America.* We are happy to renew an acquaintance with one with whom we so agreeably and profitably passed a portion of our time, and from whom we parted with much reluctance. Dr. Williamson has added to the number of our colonial histories; and we have no hesitation to give it as our opinion, that his work is among the most respectable of the kind that has come to our knowledge.

North-Carolina is remarkable as affording, among many other memorable events, a more constant succession of grievances than fell to the lot of any other colony; and it presents throughout, abundant matter for philosophical inquiry and reflection. Yet, notwithstanding this circumstance, if the minute accounts of Hackluyt, Purchas, and some others, be excepted, there seems to have been little attention paid to the progress of its colonization or civil history, since the time in which the first permanent settlements were made in the country. The researches of our author have consequently been the more laborious; and fortunately, we may add, they have been attended with success. He has derived his information chiefly from original sources; from public records, the proceedings of the governor's council, the journals of the legislative assembly; from letter books, and other manuscripts, in the possession of ancient families.

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* Register, vol. iii. p. 220—240.

Dr. Williamson commences his undertaking with a short account of the discoveries made in America, by adventurers from the different parts of Europe. He next relates the attempts of Sir Walter Raleigh, to settle a colony in North-Carolina; and, from that time, the history of North-Carolina is continued down to the beginning of the American revolution. The work closes with a view of the soil, produce, and general state of health in different parts of that country. In the proofs and explanations annexed to each volume, are inserted many valuable documents, selected with care, illustrative of matters contained in the body of the text.

We before remarked, that the materials of Dr. Williamson's history were derived chiefly from original sources; that they are such as may be depended upon for their correctness, we have the fullest confidence. In the general arrangement of these materials, we find nothing to censure, and much to commend. We have occasionally lamented the want of dates, the more frequent occurrence of which must have been attended with greater advantage. In the selection of his matter, Dr. W. has, with much propriety, enlarged upon events of importance, while those, which are of a trifling nature, are mentioned, without occupying the time of the reader. The information contained in these volumes is communicated in a style remarkable for its uniform plainness, perspicuity, and vigour. The narrative, throughout, affords numerous indications of more than ordinary penetration, into the springs of human action. The author's reflections are the result of a ready and acute mode of thinking, divested of undue bias, and are replete with good sense and salutary advice.

We have not time to enter more minutely into an examination of the present work; and our readers will obtain a more accurate idea of its merits from the following extracts, taken from the doctor's excellent view of the climate and diseases of North-Carolina, and his observations on the abuse of ardent spirits. The importance of the subjects must justify the length of our quotations.

"The climate of North-Carolina," says Dr. Williamson, "is usually thought to be unhealthy; but this character is not applicable, except to the eastern part of the state; the part that is best known to strangers, and most frequented, because it is intersected by navigable rivers, and is the general seat of commerce. Other parts of the state are exceedingly healthy. By taking a short view of the face of the country, we shall immediately perceive the cause of this remarkable difference.

"Carolina is a perfect plain for sixty miles from the Atlantic ocean, without hills or stones. It has been covered by water, at no great distance of time. Beds of oyster shells and other marine exuviæ, are found near the surface, in many parts of the flat country. These concretions of shells are burnt for making lime. The gulf stream runs along the coast, within six or seven leagues of the shore. The soundings change suddenly at the edge of the gulf stream, for the margin is nearly a perpendicular bank. A great fissure, nearly in the direction of the northeast and southwest, has been made in the bottom of the ocean, by some convulsion of nature. Such at least appears to have been the case. The ground rose to the northwestward of the chasm, and sunk to the southeastward. The sandy bottom of the sea, by this elevation to the westward, was converted into dry land. In this case, the rivers coming down from the original dry land, made a crooked path for themselves through the sandy plain. Those rivers had little descent; wherefore, in their tardy course, they deposited the vegetable mould that came down from the higher grounds. In some cases, the sandy plain had been depressed five or six feet below the level of the common surface. In those parts, it must have happened that ponds of stagnant water were formed, until the sunken ground was filled up by vegetable mould. By this hypothesis we are enabled to explain all the present phenomena of the flat country. In some parts we find large sandy tracts, perfectly level, that hardly contain any mixture of clay or vegetable soil. The growth is pine or black jack. In other parts the land is of an excellent quality, with a stiff clay bottom. Those lands are low; and in many places they require draining. The rivers are bordered by a strip of land that is lower than the common surface of the country. Those river lands are exceedingly rich; for they consist of vegetable mould, three or four feet deep, with a small mixture of sand or clay. In many places those river lands are three or four times the breadth of the river. There are other large tracts detached from the rivers in which the soil is nearly of the same quality with that of the river lands. But it is seldom mixed with sand or clay. In those tracts the vegetable soil is commonly five or six feet deep, and the whole of it is saturated with water. Such are the dismals, so called, and the other great swamps that are numerous in the flat country. Supposing as above, that the original surface, where the swamps are found, had been covered for many years with stagnant water, because it was somewhat depressed, it would follow, that the chief rivers at every great fall of rain, must have thrown part of their turbid stream into those stagnant ponds, until they were so filled with adventitious soil, as to produce reeds and other aquatic plants. The luxuriant growth in those swamps, in the progress of time, caused the surface to rise; so that in many cases it is higher than the adjacent sandy and dry plain. Some of those swamps are fifteen or twenty miles in diameter, and they are chiefly covered, at present, with a thick growth of cypress* or juniper.† In some parts they are covered with maple,* poplar,† and white oak,‡ intermixed with tall reeds, magnolia,§ and green briars.

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* Cupressus disticha, foliis disticis patentibus.

† Cupressus tryoides, foliis imbricatis frondibus ancipitibus.

"The soil increases every year by the addition of decayed vegetables; but the water is detained by the leaves and the roots of trees, so as to have little motion, though the surface has become much higher than the water in the adjacent rivers."

"It is conjectured that the swamps, within forty miles of the coast, do not occupy less than a fifth part of the surface. It will readily be perceived, that so large a quantity of stagnant water among putrescent vegetables, must be unfriendly to the health of the inhabitants. Intermitting fevers are very frequent in the summer and autumn; but fevers with inflammatory symptoms, that have a putrid tendency, prevail in the winter. The progress of time and cultivation of the soil, cannot fail to make a considerable change in the climate, in the flat lands of Carolina. And the effects of that change must be favourable to the health of the inhabitants. The natural operations of time would reduce those extensive and numerous swamps, to the condition of firm and dry land; but this event must be greatly accelerated by the progress of cultivation."

"Intermitting fevers are the usual complaints in the eastern part of Carolina. Those fevers seem to arise, as we have already observed, from the exhalations of stagnant water or putrid vegetables. They prevail more or less, according to the quantity of water that is exhaled, impregnated with putrescent vegetables. All our observations tend to confirm this opinion. When stagnant water is not exhaled, intermitting fevers are less prevalent. When putrescent vegetables are exposed to the action of the sun, intermittents are frequent. In the midst of great forests, the sun never visits the surface; his rays being fully intercepted by a thick growth of cypress, juniper, magnolia, and reeds. Intermitting fevers do not prevail in such places. Families who live in the Dismals, employed in making shingles, without a perch of clear or dry ground, enjoy more health than people who live on their new plantations, near the rivers or swamps. The bad effect of recent cultivation, by which decaying vegetables are exposed to the sun, is severely felt in flat countries and warm climates. Carolina was less sickly before the country was opened. The second colony of adventurers remained twelve months in the country, and they lost only five men out of one hundred and seven, though they were badly sheltered, and suffered much by the scarcity of provisions. A gentleman in Craven county lived on his farm above forty years, without suffering by intermitting fevers, though his family consisted of fifty or sixty persons. There were about one hundred acres of clear ground in front of his house that had been cultivated many years: but there was a thick wood behind the house. In the beginning of the year 1785 he caused all the timber and shrubs that were behind his house, within four or five hundred yards, to be cut down. His object was pasture and a free circulation of air. One third of his family, on the next summer, was taken down by intermitting fevers. Such complaints were not more prevalent than usual, during that summer, in other parts of the flat country. Those fevers were certainly caused by exposing to the sun a large surface of fresh land, covered with putrescent vegetables. Similar effects are very common in the West-Indies, where they are fatal to such a degree, that soil, newly turned up, is supposed by the planters to contain some pestilential quality. Putrid exhalations are the general cause of those bilious intermittents; but in tropical climates, where the sun is vertical, and the tendency to putrefaction great, and where the influence of heat on the living body increases the malignancy of the complaint, those fevers become most fatal. The simple intermitting fever that prevails during the summer season, in Carolina, is seldom fatal to the natives, except in cases where the frequent recurrence of such fevers may occasion an indurated spleen and other visceral obstructions. The consequence of such obstructions is a dropsy or other cachectical complaint, of which the patient dies. Fevers of the warm season sometimes become dangerous, especially to strangers, by the imprudent conduct of the patient. Upon the approach of febrile symptoms, strangers are apt, as they express themselves, to brave the fever. In this case, by taking exercise, increasing the muscular motion, and not unfrequently by the use of ardent spirits, or other stimulating drinks, they bring on a typhus or other constant fever, instead of a simple intermittent. A warm season, followed by a considerable drought, often produces an endemical flux or dysentery. These complaints are doubtless of the putrid kind, and should be treated accordingly.

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* Acer rubrum.

† Arbor tulipifera Virginiana.

‡ Quercus alba Virginiana.

§ Magnolia glauca, foliis oblato oblongis, subtus glaucis.

"People on the low grounds of Carolina, are frequently attacked by fevers in the winter, which are called inflammatory; for they are attended by pain in some part of the head or breast. These fevers, in many cases, prove fatal in three or four days. By the general symptoms, compared with the circumstances and places in which those fevers prevail, they seem to be of the putrid kind. They prevail in districts that are subject to intermitting fevers; whence they may be presumed to arise, in some measure, from the same cause; but they prevail in a different season of the year; whence it may be inferred, that there is a combination of causes in one fever that does not occur in the other. It has already been observed, that intermitting fevers are more or less frequent in the low lands of Carolina, according to the quantity of putrescent vegetable substance that is exposed to the action of the sun. From this circumstance it is conjectured, that the most simple species of intermitting fevers are, in some measure, the effect of putrefaction; but the most dangerous putrid fevers arise from the same cause. The difference then between the appearance or the effects of those fevers must depend on the state of the solids or the fluids of the person affected, or upon the acrimony or virulence which the putrescent matter may have acquired before it is absorbed. The appearance of those fevers in the summer, when putrescent matter is plentifully diluted by rain, seems to be determined, in some measure, by the constitutions of the several patients. Strangers, from a northern climate, who have a vigorous constitution, whose muscular system is well braced, instead of having a moderate fever, in the summer or autumn, that will duly intermit after the first or second day, in many cases have an ardent fever, with full pulse. Instead of intermitting, it puts on the appearance of a typhus, or a nervous fever, in a few days, and terminates fatally. The same cause should produce the same effect upon similar bodies; but the effects upon the native and stranger are not alike; hence we infer, that a tense fibre or vigorous constitution, which naturally excites more heat, or causes the fever to be more ardent, produces, at the same time, a different and dangerous type. According to this theory, we observe, that by taking violent exercise, when the symptoms of an intermitting fever are coming on, the fever becomes ardent, and in many cases it is attended with danger. From these facts it would appear, that the affecting cause remaining the same, the fever is more or less dangerous according to the constitution of the patient, or any other circumstance that tends more or less to brace the system, or produce symptoms of inflammation.

" Though the fevers that appear in winter, are not usually called intermittents, they are not less affected by putrescent vegetable matter than the autumnal fevers. Those winter fevers have been deemed inflammatory, because, they are usually attended by a pain in the head, or by a pain in the breast, that resembles pleurisy. They prevail not only in the same districts in which intermittents are common, but they are most likely to attack people who, on the preceding autumn, had suffered by intermitting fevers. These circumstances make it probable, but there are other circumstances from which it is certain, that the fevers to which I refer arise from a septic cause. In different years they prevail in different neighbourhoods, affecting one or more persons in every family. When this disease is most prevalent, it may generally be traced to the vicinity of a marsh, or the bed of a river, where mud or other putrescent vegetable substance has been exposed to the sun, in dry weather. The effects of dry weather on similar grounds, in the summer season, are frequently a flux or dysentery, which is also of the putrid kind. If the same cause, that would produce a simple intermittent, may also be found to produce an ardent fever, tending to putrefaction, by the sole concurrence of muscular motion, or the direct operation of the sun, whereby heat is excited, we are to presume that winter colds would produce remarkable effects on the appearance of that fever. The common effect of cold is to brace the solids and check the perspiration. In the case before us, the perspiration being obstructed, the offending matter, that has been absorbed, is retained in the system, and gives a septic disposition to the fluids, by the increased action of the muscles.* It is generally observed that men suffer more than women or children by this disease. In the months of December and January 1794, 5, eight or nine men, the heads of families, who lived near the river Neus, were taken off by a fever such as I have mentioned; but no other people in that vicinity suffered by the disease. Some cause must have existed for this remarkable difference. The complaints of those men were not produced by intemperance alone; for though ardent spirits injure the system, not only by destroying the powers of the solids, but also by vitiating the fluids, whence they bring on death in various forms, some of the men who fell under that bilious pleurisy, were not intemperate. In this case the disease seems to have arisen from obstructed perspiration. It cannot escape notice that men in Carolina are chiefly exposed to complaints which arise from that source. The temperature of the weather, in the eastern part of the state, is very changeable. When the wind is at northwest, there is occasional hard frost; but the weather, at other times is moderate and soft. As there are not many cold days, nor many days in which flannels or thick woolen garments are necessary, people fit their dress for the temperate weather, and not for the few days of incidental cold. They do not consider that warm clothes may be worn in temperate weather without danger; but thin clothes, in cold weather, expose the wearer to mortal disease. Women and children are not only more temperate than men, but they are usually at home; and they can increase their clothes upon a sudden approach of cold, or they can sit by the fire. Men are frequently surprised by rain or sudden cold, when they are abroad, and are not provided with a suitable dress. Prudence is the child of experience, but heedless men are seldom taught by the experience of other people. Personal experience in this as in many other cases, frequently comes too late. When the planters, they especially who have been visited by intermitting fevers during the summer or autumn, and those who live in the flat country, shall have the prudence to keep themselves dry, and shall be provided, in all their excursions, during the winter, with clothing fitted to cold weather, when they shall exchange the use of grog and ardent spirits for beer well seasoned with hops, or water that is less dangerous than either, we may be assured that many useful lives will be saved to the community.

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* It has been alleged, that the endemic fevers of summer and winter are equally caused by the absorption of putrid matter into the system. In support of this opinion we observe, that being exposed to a heavy shower in summer or autumn, in warm climates, is usually followed by intermitting fevers ; but people at sea, in the same latitude and season of the year, expose themselves to showers without danger, because the atmosphere, at sea, is not charged with putrescent exhalations. It may also be observed, that people who use unguents, in warm climates, are less endangered by those fevers. Black people and white people, who have a copious perspiration, are also less subject to those complaints. Cold evenings in the autumn, and rain, by shutting the pores of the skin, are known to be the cause of innumerable fevers. While the perspiration is free, the putrid matter, that may be taken in by the absorbing vessels, is immediately discharged from the system; but in the case of obstructed perspiration, it is retained among the circulating fluids, and becomes the seed of mortal disease. In cold weather, the complaint is usually thrown upon the head or breast.

"When the country shall be sufficiently cleared, and the lands perfectly drained, there is much reason to believe, that people near the seacoast will enjoy a desirable state of health through the latter part of the summer, which is now called the sickly season.* The weather will also be less variable through the winter season, for reasons that have been stated; and a free circulation of air will diminish the summer's heat.

There are not many countries, in which the state of health differs so much as it does at present in the different parts of North Carolina. At the distance of sixty or seventy miles from the coast the land begins to rise into small hills, stones appear on the surface, and the streams ripple in their course. As we advance a little further to the westward, we find all the variety of hills and dales that may consist with a fertile country, fit for cultivation. In that happy climate where the soil is good, and the water pure; where the inhabitants enjoy the desirable effects of winter, without suffering by the vigorous severity of cold; there are few of the diseases which are most painful and destructive in cold climates: neither are the inhabitants wasted by the more fatal diseases of warm climates. There are not many parts in the United States, perhaps there is not any part of the world, in which families increase faster than in the western part of Carolina. When we consider, that the inhabitants are seldom affected by coughs, consumptions, or inflammatory complaints, for the winters are temperate, that intermitting, bilious or putrid fevers are seldom found among them; we naturally infer, that the climate must be healthy. It is not denied, that people, in many other climates or countries, are equally healthy with those in the western part of Carolina; but the winters in other regions, that are deemed healthy, are more severe, or the land is less fertile, or it is not so cheap, or the means of supporting a family, from one cause and another, are more difficult than in Carolina; whence it follows, that early marriages are not so frequent, and the increase of families is not so great. We have not the means of comparing the increase of people in Carolina with that in foreign countries, but it has been compared with the increase in other states. It appears by the census taken in the year 1791, that the number of inhabitants above sixteen years old, exceeded the number under sixteen in all the northern and middle states, including Maryland. In the southern states there was a difference in favour of those under sixteen, and this difference was greater in North Carolina than in any other state, except Kentucky. This difference might be explained by supposing that the duration of human life is shorter in the southern states, and that sixteen years is nearer the middle of the general extent; but this solution cannot be admitted, because in the most healthy parts of the southern states the difference was greatest in favour of the class under sixteen. The greater proportion of people below sixteen must be the combined effect of early marriage and a good climate. Families are easily supported where the lands are good and the winters mild. In this case people marry young, and have many children: but early marriage alone will not produce a great proportion of children when compared to that of grown persons, because sickly climates are not less fatal to infants than to those who are more advanced in years. This distinction is fully supported by the census in North Carolina. The number of males in the whole state, below sixteen, was to that above sixteen, nearly as eleven to ten; but this difference cannot be the effect of early marriage alone, or the facility of maintaining a family; it depends very much on the salubrity of the climate. People live in the district of Edenton with more ease than in the district of Salisbury; for their cattle require less feeding in winter,* and they have a plentiful supply of fish; but the proportion of persons under sixteen, was to that above sixteen, in Salisbury district, compared to that in Edenton district, nearly as three to one. In Salisbury district there were fifteen thousand eight hundred and twenty-six males under sixteen, and thirteen thousand nine hundred and eight above sixteen. The difference is nearly equal to a seventh part of the whole number of the older class. In Edenton district, the number of males under sixteen, was eight thousand six hundred and ninety-six, and the number above sixteen, was eight thousand three hundred and ninety-four: the difference being less than a twenty-seventh part of the number of the older class. This remarkable excess, in favour of Salisbury district, can only be explained by the greater salubrity of the climate. There are some very old people in the western parts of Carolina, but they were not born in that country; they are older than the settlement. After the country shall have been planted two or three centuries, and the natives shall have attained the length of years that corresponds with the climate, a greater proportion of the inhabitants above sixteen years will doubtless be found."

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* Instances of longevity are not wanting in Carolina in the flat country.

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* The flat lands near the coast, except such of them as are composed of sand, are generally covered by a thick growth of canes. The leaves of this plant are green all winter. They are long and succulent, and cattle in general are greatly attached to them.

The observations of Dr. Williamson, on the abuse of ardent spirits, cannot be too earnestly recommended to the attention of our legislators, magistrates, and fellow citizens in general.

Our author, after giving an account of a dangerous insurrection in North-Carolina, that was quelled in the year 1774, observes, that the leaders and chief agents in the insurrection, were Howel, Hunter, Butler, and Husbands. These men fled from the province, and were outlawed. The person last named, Herman Husbands, settled near Pittsburg, in the western part of Pennsylvania, where, after an interval of twenty-three years, he was believed to have taken an active part in what is called the whiskey insurrection, "One of the most inexcusable riots, (as the historian observes) that ever disgraced a civilized people. A riot, or rebellion, that was countenanced and promoted, to the reproach of learning and talents, and the disgrace of humanity, by men who knew their duty; by men whose sole object was popularity, that they might be elected to honourable employments. It was a riot to prevent a tax upon ardent spirits. A riot for the protection and promotion of drunkenness; that bane of society, that parent of idleness, poverty, and disease. Is it probable, can it be supposed, that the rioters were sober!"

"We cannot observe, (continues Dr. W. in a note to the above paragraph) the increasing thirst, and growing demand for ardent spirits, that appears in every part of the United States, without forming painful anticipations concerning this dangerous appetite.

The experience of the world in former ages is not a rule by which we can estimate the deadly effects of strong drink.

"The process of distillation, and the use of ardent spirits, were altogether unknown to the ancients. In their devotions to the drunken deity, they were confined to the use of wine, or other fermented liquors; but grapes or apples are not the produce of every climate, neither are fermented liquors half so destructive as ardent spirits. They never were the morning cordial, the noonday beverage, and the evening anodyne. They were the luxury of the rich, but they were not the bane of the multitude. In the present age, some nations are prohibited the use of strong drink, by the precepts of their religion; and people without number, are yet unacquainted with the method of preparing ardent spirits. In Europe and America, the fatal art is fully understood, and the inhabitants claim the privilege of drinking, provided they do not exceed the bounds of moderation. Yes, moderation is the rule by which every man is guided in the use of strong drink. I have seen a man contend for this virtue, who was usually intoxicated seven times in the week. The most habitual sot is not intemperate in his own estimation, for he does not exceed the bounds of his own desires. The vitiated love of strong drink appears to be one of the most common infirmities of human nature. To the savage it is a deadly passion; for he is not restrained by education, or the precepts of morality. The Indians of America, who have cultivated an acquaintance with ardent spirits, have been consumed by it, as grass or straw are consumed by fire. Pestilence and famine, its fellow-labourers in the work of death, are less, far less destructive. Those enemies of our species are universally marked as such. They excite general apprehension of danger, and people fly from the enemy, or they endeavour to guard themselves against him. But strong drink has nothing terrible in its approach. Like a treacherous friend, or insiduous flatterer, it is admitted into all societies, while it is secretly cutting down the weak and the strong. The fabled voice of the syren was not so delusive; the poison of serpents has never been so destructive. What have the white inhabitants of America to expect from a beverage, that has confessedly destroyed the Indian natives? Our bodies are not formed of different materials. The hope of posterity rests at present on the virtuous pride of the other sex. Our women are not less distinguished by their temperance than by their other virtues; for it is admitted, that women, of the poorest class in society, who were born in America, will not debase themselves by intoxication, as women in like circumstances, in sundry parts of Europe.

"There is not a nation on the face of the earth, nor ever was there a nation, so much endangered by the use of strong drink, as the citizens of the United States of America. As the passion for strong drink is found to be nearly alike among all varieties of men, it must follow that drunkenness will prevail among the multitude in every nation, not restrained by religion, according to the abundance of strong liquor, or the ease with which it may be obtained. But it must be admitted, that strong drink, compared with the price of labour, is cheaper, or it is more easily obtained in the United States, than in any other part of the world. Let us compare the prices in England alone with those in the United States; for it is believed, that no part of the old continent produces more intemperate drinkers than some parts of the British dominions. In London, the price of rum, the duties paid, may be stated at twelve shillings the gallon; Holland gin at twelve shillings and nine pence; Spanish brandy at eleven shillings and nine pence. The average price of those liquors, reduced to our currency, is two hundred and seventy cents per gallon. In the city of New-York, (anno 1801,) West-India rum, the duties paid, may be stated at ninety cents; New-England rum at seventy; Holland gin at one hundred and eighteen; American gin at seventy-five; Spanish brandy at one hundred and ten; and American brandy or whiskey, at sixty cents per gallon. The average price is eighty-nine cents. It follows, that one gallon of ardent spirits in London, costs as much as three gallons in New-York. But the mechanic or day-labourer in New-York, receives double the wages that similar persons receive in London; viz. A journeyman carpenter or mason receives in New-York from one hundred and twenty-five to one hundred and thirty-seven cents the day: in London, he receives sixty. The day labourer in New-York receives from eighty-eight to one hundred cents the day; in London he receives forty-five cents. That is to say, the price of one day's labour, in New-York, will buy six times the quantity of ardent spirits that it will buy in London. Six to one is a terrible difference. Is it not to be feared, that our fellow-citizens will destroy themselves with ardent spirits, in proportion to the ease with which they may be purchased? Where is the man so inattentive as not to have discovered the increase of drunkenness within the last ten years? For, in that time, the price of labour and the means of obtaining rum have greatly increased. Has the labourer become more wealthy by his increase of wages? Are his wife and children better fed, better clothed, or better instructed? I think they are not. His debts have increased, for his increased wages are expended in rum or brandy, those parents of idleness and vice. In this happy country, where employment of every kind is to be had, and where every man, if he pleases, may cultivate his own soil, there are few instances of extreme poverty that may not be traced to the thirst for strong drink. By a culpable neglect of duty on the part of the civil magistrates; by a contempt of law, and a shameful prostration of morals on the part of small traders, our stores for dry goods in the country, are converted into tippling houses; and our grocery stores are converted into grog-shops, and beggar-makers. Thus it is, that our fellow-citizens are tempted to destroy the energy of body and mind; to sink themselves into idleness, poverty, and death.

"The national legislature, the legislatures of the several states, and the civil magistrates, will answer to their consciences, their country, and their God, for the manner in which they guard the morals, the health, and the lives of their fellow-citizens."

The author originally proposed to bring down the history of North-Carolina to the year 1790, and had actually collected materials for that purpose. We like his work so well, that we cannot but sincerely regret he abandoned his original intention, and hope his days may be continued to complete an undertaking so ably commenced.

Art. II. *The* Emporium *of* Arts *and* Sciences. *Conducted by* John Redman Coxe, M. D. *Professor of Chemistry in the University of Pennsylvania, &c.* Philadelphia. J. Delaplaine. vol. i. 8vo. pp. 480. 1812.

Nothing more strikingly characterizes the literature of the present age, than the increased and still increasing number of periodical publications. Those who are acquainted with the progress and present state of science, will readily attribute its more general diffusion and cultivation to the beneficial effects of journals of this kind ; and they cannot but be gratified with the present addition to their number, by the Emporium of Dr. Coxe.

Dr. Coxe is already advantageously known as the author of several works on medicine, and as the conductor of the Medical Museum, a periodical journal, formerly published in Philadelphia, for several years. Of his talents and industry, it is therefore unnecessary here to make mention. He is inured to the species of literary labour in which he has at present embarked ; and we have no hesitation to say, that the Emporium, executed in the manner proposed, will prove a rich repository of practical information, in the various branches of science, and largely contribute to the general stock of useful knowledge. *Selection* is the principle upon which it is conducted, and its materials are derived chiefly from foreign sources, the periodical journals of England, France, and other parts of Europe. The expense of purchasing these journals, the great uncertainty and delay in their regular transmission, independent of the condition, that in their contents, they are often filled with matters wholly useless and inapplicable to the present condition of our country, have long operated as a barrier to their importation, and circumscribed their usefulness. These circumstances enhance the value and the responsibility of the service undertaken by Professor Coxe.

We quote the following pertinent remarks from the prospectus :

" The Emporium professes to be a source of *practical information in the various branches of scientific research*, and is intended to convey the rich harvest of *facts*, contained in foreign valuable papers on *Chemistry*, *Mineralogy*, *Natural Philosophy*, *Arts*, *Sciences*, and *Agriculture*, with the proper cultivation of which, undoubtedly the truest interests of every country, but especially our own, are closely connected.

" We might expatiate largely on the great utility of such a work, but this would be unnecessary, since our numerous artists and manufacturers will readily perceive that they may derive from it the plainest and easiest means to lessen labour and unnecessary application. In some it will awaken reflection on a favourite pursuit ; new sources of industry and emolument will be pointed out to others, and the practical knowledge of many will receive improvement and unexpected aid. Standing, as it were, upon the shoulders of our transatlantic rivals, we may hope to catch new views of the prospect before us, which will enable us to shorten the road to ultimate perfection.

" In this work, Science, which is of no party, will equally distribute her favours to all. It is avowedly a work of practical utility, in which all are equally concerned. Its object is to make that ours, which may subserve both public and private interest. To practical information all other objects are merely secondary ; speculative opinions will therefore, as seldom as possible be obtruded.

" A selection will appear in the Emporium, which will render it a kind of *text book* to our citizens, and which, if successfully continued, it is hoped will prove a valuable library of useful knowledge to every class of society.

" Although what has been mentioned will form the prominent features of our publication, it is intended likewise to preserve on its pages, such insulated facts as may hereafter prove useful. Miscellaneous observations of practical tendency, together with several minor, though not uninteresting subjects of information, will, it is expected, afford a repast to all persons who feel interested in the advancement of science.

"Notwithstanding it is designed principally to attend to the progressive state of science in Europe, from whence we must reasonably look for information for many years to come, yet original papers of our country of real merit, and of practical tendency, will at all times be cheerfully received, and promptly communicated to the public."

We shall only add, that the Emporium, as a specimen of typography, is neatly executed. The engravings with which it is enriched, are honourable to the spirit of the publisher, Mr. Joseph Delaplaine, of Philadelphia.

DOMESTIC INTELLIGENCE.

Case of Epilepsy.

Kortright, Oct. 13, 1812.

Dear Sir,

The following case of epilepsy, with due deference, I transmit to you.

On the 4th day of September, 1811, I was called to the town of Harpersfield, to visit Isabel M'Kee, aged eleven years. During the space of two years, she had been subject to epilepsy, having two and sometimes three fits daily, so that her intellectual faculties were greatly impaired. Nearly three weeks before I was called, at the commencement of a fit, she had fallen into the fire and burnt her left arm, from the elbow to the extremities of her fingers. Little attention was paid to her, until the day I saw her; when she was lying horizontally on the floor, and frequently threatened with syncope, by means of the loss of about four pounds of blood, the artery of the thumb having ulcerated. I examined the arm, and found the integuments and part of the muscles in a state of sphacelus, but separated from the sound parts, a little below the elbow. I then removed all the morbid parts, secured the artery, by compression, and dressed the sore. I attended her till the cure was completed. From the day she fell into the fire, until the time of the hemorrhagy, she had only two fits, and has been free from epilepsy ever since; and has fully regained her rational faculties.

From the result of this case, shall it be supposed, that the origin of the disease was in the fore-arm or hand, either in the integuments, or immediately under, and that the disease itself was partially affected by the vesication, and that the loss of so much blood, by diminishing the repletion, effected the cure? I am apt to think, that the hemorrhagy had no share in the cure, the sphacelus having preceded the hemorrhagy, as the epilepsy partially ceased when the integuments were abraded; and when they became sphacelated there could be no more irritation, and therefore no more aura epileptica. In such cases, after repeated epispastics, without the desired effect, would it not be advisable to scarify the parts, in a contrary direction of the muscles, through the integuments?

I am, dear sir,
Your most obedient humble servant,
HENRY MARSHALL.

Dr. David Hosack.

Inland Navigation of the State of New-York.

Agreeably to promise, we insert in the Register, the interesting and satisfactory Report of the State Commissioners relative to the improvements of the Inland Navigation of New-York, dated March, 1812. By the publication of this Report, we complete all the official documents which have appeared on this important subject.—*Ed.*

The Commissioners *appointed in and by an Act to provide for the Improvement of the Internal Navigation of the State, beg leave to Report:*

That, in obedience to the directions of the said act, they made application to congress and to the legislatures of the several states and territories, copies of which are annexed in the papers marked No. 1,* and No. 2.† They conceived it proper also, to address the President of the United States on the subject of their appointment, and annex a copy of their letter to him, No. 3.*

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* Inserted in the Register, vol. ii. p. 449.

† Register, vol. iii. p. 114.

Moreover, considering the magnitude of the object, they deemed it advisable to depute two of their members to the general government, with their letter to the president, and application to the senate and house of representatives. A copy of the report made by that deputation, on the 24th of last month, is also annexed, marked No. 4.† It appears from this report, that although it be uncertain whether the national government will do any thing, it is certain they will do nothing from which immediate aid can be derived. The deputation found itself obliged, by prudential considerations, not only to blend the navigation between Lake Erie and Hudson's river, with objects, some of which are subservient to local interest, but to refrain from asking an advance or even an appropriation of money. The utmost they hoped to obtain was a grant of land; a grant so limited as not to take effect until after the canal should be completed, at the expense of New-York.

It might have been expected that so moderate a request, coupled with the offer that no toll should be taken, would have been immediately granted.

The motives which led to doubt and delay are unknown to the commissioners; and their profound respect for those to whom is committed the conduct of our national affairs, forbids them to hazard a conjecture. But if the offer had been, or should be accepted, still the canal is to be made by the state. So that if the bounty of congress had granted the entreated boon, it would have been merely the purchase, at less than its cost, of a most valuable object, by paying for it a tract of unsaleable land.

The commissioners, in their first report, took the liberty to express the opinion, that an offer of the canal should be made to the national government; and they saw with pleasure and with pride, that the Legislature (concurring in this opinion) adopted the most honourable measures for inducing the United States to acquire it.

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* Register, vol. iii. p. 116.

† Register, vol ii. p. 451.

But, the offer made and not accepted, the state is at liberty to consult and pursue the maxims of policy. These seem imperatively to demand that the canal be made by her, and for her own account, as soon as circumstances will permit. It is believed that a revenue may be derived from it, far exceeding the interest of what it will cost; and it seems just that those of our citizens who have no immediate interest in the work, should find retribution for their share of the cost (if any) in a revenue which will lessen their future contributions. Whether this subject be considered with a view to commerce and finance, or on the more extensive scale of policy, there would be a want of wisdom, and almost of piety, not to employ for public advantage those means which Divine Providence has placed so completely within our power.

The commissioners have received some replies to the applications they made to the states and territories.

The legislature of Tennessee, on the 16th of November, resolved, that their senators and representatives should be requested to support any laudable attempt made to the congress of the United States, soliciting the aid of the general government in relation to the canal navigation between Hudson's river and the great lakes.

On the 4th of November, the legislature of New-Jersey say, "Although we feel a deep intreest in promoting every attempt to open a communication, by means of canal navigation, between the great lakes and the navigable rivers running through the Atlantic states; and are fully sensible that such communication would tend to enrich, consolidate and strengthen the union; yet as we have not sufficient means for completing the plans of public improvement within this state, already projected, and deemed of the first importance to our immediate prosperity, it would not be advisable, at present, to lend assistance to improvements in other states. And although we anticipate with pleasure, judging from the enlightened policy hitherto pursued in extending public improvements by our national government, that the time is not far distant when, from the rapidly increasing wealth of our country, the vast plans of extending canal navigation will be carried into effect, so as to form a chain of communications from the waters of the Hudson river to the great lakes, and from the lakes to the Mississippi; yet, as that period has not arrived, we see nothing to warrant us in giving instructions to our representatives in congress, as to the measures they shall pursue, when this subject shall come before them."

The legislature of Connecticut, at a general assembly holden at New-Haven, on the second Thursday of October, resolved, that it was inexpedient to take any measures on the application of the commissioners appointed by the state of New-York for opening a communication by means of a canal navigation between the great lakes and Hudson's river. The reasons assigned by the committee, on whose report the resolution was made, were, that the state could not supply money, and (having elected able men to assist in the councils of the nation) confided national interests to the unbiassed judgment of those whose duty it was to attend to them, and whose means of information are such as to enable them to perform that duty in the best manner.

The legislature of Vermont, on the 30th and 31st October, expressed the opinion that the object was well worthy of consideration; but conceiving the period when they received the communication to be too late to decide on a subject of such importance, they postponed the further consideration to their next session.

On the 29th and 30th of January, the legislature of Massachusetts, with the impartial and dignified wisdom of conscious greatness, resolved unanimously, that the senators of that commonwealth should be instructed, and their representatives requested to use their influence for promoting, by all reasonable encouragement, (in such mode as congress in their wisdom might direct) the opening of a communication, by means of a canal navigation, between the great lakes and Hudson's river: regard being had to the special benefit which would accrue to the state of New-York from the accomplishment of that project.

The legislature of Ohio, also, have (as will be perceived by the message of his excellency the governor) fully approved of the plan.

The commissioners have moreover received a paper signed Reuben Atwater, acting governor of Michigan, A. B. Woodward, J. Witherell, and countersigned Jos. Watson, secretary, which is of the following purport:—"Whereas the commissioners of internal navigation in the state of New-York have addressed to the governor and judges of the Territory of Michigan, certain communications relative to a canal in the state of New-York, which being considered, resolved unanimously, that in the opinion of the undersigned, the canal contemplated by the commissioners of internal navigation in the state of New-York, from Black Rock to Rome, would not be so desirable as a canal round the cataract of Niagara, and another by the Falls of the Oswego. Passed the tenth day of January, one thousand eight hundred and twelve."

The commissioners have too much respect for these gentlemen to suppose they would have given this opinion without information and consideration. Wherefore, they must infer that the information received was not founded in fact; or that, not having habitually turned their attention to objects of this sort, they are not so well qualified to judge, as the consciousness of intelligence respecting matters more familiar to their minds may have led them to suppose. The commissioners, previous to their former report, viewed the country, caused surveys to be made, obtained all the information in their power, listened to the reasons on either side with impartial attention; and although they have not the vanity to oppose their judgment to that of professional men, persist in believing that the conclusions they drew were not unfounded. They feel so much the more confidence in their opinion, as it accords with that of Mr. Weston, whose abilities as an engineer (in this particular department) are unquestioned. To that gentleman their report was transmitted by one of his friends; and in reply (after treating of the means to obtain sufficient water at the summit level of Rome) he says, "supposing your fears on this subject to be removed, you have no further obstacles to encounter, in your progress westward, until you arrive at Oswego falls. From thence to Oswego is the great work. I know not whether I ever declared that it was *impossible* to conduct a canal by this route; I should rather think it was the technical term *impracticable*, of course restricted in the sense mentioned in the report; and under those limitations, I still deem it so; and such I am persuaded it will be declared by every *practical* professional man. But supposing your wishes accomplished, the question then occurs, would the trade of the lakes be directed into this channel, from its natural one down the St. Lawrence. On the superior facilities afforded by this river, for the transportation of produce, I perfectly agree with the commissioners, having traversed it twice between Kingston and Montreal, and each time viewed it very attentively. I can therefore assert with confidence, that I know of no existing navigation, of such extent, which can be rendered perfect at so small an expense. However, should your noble plan, of uniting Lake Erie with the Hudson, be carried into effect, you have to fear no rivalry. The commerce of the enormous extent of country bordering on the upper lakes, is yours forever; and to such an incalculable amount as would baffle all conjecture to conceive."

If the Michigan gentlemen were alone in their opinion, it might be useless to say any thing, seeing there is little probability that any contribution will be required from them. But there are, it is said, men of influential character who preach the same doctrine. To this effect they assume, what remains to be proved, not only that lock navigation by the falls of Oswego and cataract of Niagara is practicable, but that it is both cheaper and better than a canal direct from the Niagara to the Hudson river. On the practicability it would be superfluous to add a remark, for those who believe they can, from a cursory view, or no view at all, judge better than such men as Mr. Weston, after critical examination of the ground, will hardly expect to obtain the confidence of others, however great their reliance on themselves. Nevertheless, these gentlemen are entreated seriously to consider whether it be prudent, or even honest, to hazard misleading those who think well of them, and thereby involving the state in great and fruitless expense. And this must be the consequence of undertaking the work they recommend. That the cost will be great is certified by all who possess competent judgment and information.

That it will be fruitless, may be proved by facts visible to every one, who chooses to open his eyes. In the gazettes of this city are advertised the rates at which goods will be carried from the ports of lake Ontario, to Ogdensburgh, and thence to Montreal. The first are lower than have heretofore prevailed between Lewistown and Oswego. The second are fifty-five cents in scows, and eighty-eight cents in boats, for a barrel of flour. But to ascend Oswego river by locks, and then, after crossing Oneida lake, to ascend Wood creek in boats, which, for great part of the way, must be rowed by men, would, it is believed, cost not less than fifty cents per barrel; because, if three men bring up thirty barrels in five days, at fifty cents per barrel, they would earn only one dollar per day each; allowing for toll nothing, for delay while waiting for freight nothing, for wear and tear of the boat nothing, and nothing for the return empty, if no freight should offer.

Thus it seems probable that produce could not be taken from Oswego to Rome, for less than from Ogdensburgh to Montreal; so that the communication which professional men, after due examination, consider as impracticable, unless at an enormous expense, wholly disproportionate to the object, but which some gentlemen assume, without examination, to be very simple, would, if completed, be of no avail. Instead of drawing to us the trade of our neighbours, it would turn much of our trade to them. Farmers who cannot send their produce by land, from beyond Geneva to Albany, must carry it to one of the few bad harbours on Lake Ontario, thence to wait the arrival of schooners from Ogdensburgh. But, it is certain, even if a commerce with those vast regions which surround the great lakes, be put out of the question, that the inhabitants of our western counties must be greatly benefitted by a navigable canal, dug at a distance from Lake Ontario. Let the mind be turned to a tract of country, fifty miles wide, and stretched out east and west on the south side of that lake. It cannot be denied that, if good harbours were abundant on its shores, and if the adjacent country offered good roads, the average distance of land carriage must be at least twenty-five miles. But, inasmuch as the harbours are few, it must be sixty or seventy from many parts of the tract. Under these circumstances, let it be supposed that a canal should be run east and west through the middle. As that would be accessible in every part, it is evident that the extreme distance of land carriage would be less than the mean distance at present. The conclusion is so clear, that to say more would not show proper respect to the wisdom of the legislature. There is another part of the subject, however, which stands in close connexion with what has just been advanced, and which, coming in support of Mr. Weston's opinion on the effect of the canal in securing to this state the commerce of the western world, it would be unjust to withhold.

The commissioners pray leave, then, to revert to and develop the basis of a calculation stated in their first report. Two horses can, in still water, draw a boat laden with fifty tons at the rate of two miles and a half in an hour, wherefore the progress in eight hours will be twenty miles. This, then, is the smallest distance which can reasonably be expected in one day. Now, as three men will be required to manage and steer a boat, the daily allowance of five dollars may be made for men and horses, being one dollar each; and that is surely enough. But a further allowance must be made for use of the boat, profit of the owner, and time unavoidably lost. It may be well to appropriate to these objects all the return freight, and charge the whole expense, to and fro, on what may be called the export cargo. This will, of course, double the amount, and bring it to ten dollars for twenty miles, or fifty cents per mile. Wherefore the extent of what it can cost to transport fifty tons one mile, on a canal, being fifty cents, the rate is one cent per ton per mile. To this, perhaps, it will be objected, that experience in this state does by no means justify so low an estimate. But there is no such experience, for there is no canal navigation in the state: and the commissioners have already, in their first report, stated the objections to following rivers, creeks, brooks and torrents, by the main strength of men, instead of drawing boats by horses along the tranquil surface of a canal.

Let it be supposed that the windings of a canal will so far exceed those of the present road, as that the length from lake Erie to Hudson's river shall be three hundred and fifty miles; consequently that the transportation of a ton will cost three hundred and fifty cents. To this let two hundred and fifty more be added, for toll, the amount will then be six hundred cents per ton; and taking ten barrels of flour to a ton, the transportation of each barrel will cost sixty cents. If to this twenty cents be added for freight to New-York, the total will be but eighty cents, from the port of discharge on lake Erie, to the commercial emporium of New-York, and the risque of this route is so trifling as not to merit notice. By the advertisement already alluded to, it appears that the lowest price of freight (and for part of the way in hazardous craft) is ninety-three cents per barrel of flour, from Lewistown to Montreal. Instead of adding for insurance, let something be taken away, and let it be supposed that hereafter both freight and insurance shall cost but ninety cents, even then nine barrels of flour will be taken from above the falls of Niagara to New-York, for the same price that eight can be taken now from below those falls to Montreal. The expense of passing from Lake Erie to Lake Ontario must be added. And here, let it be asked, what kind of locks are those which gentlemen project round the cataract of Niagara. Every expense which may be needful to facilitate the navigation through the rapid at Black Rock must be encountered, in the one case as in the other. But when a large vessel, from Lake Erie, shall have brought her cargo to within a small distance of the cataract, it would be ridiculous to put it on board of small boats merely to descend by locks, to Lake Ontario, and then put it again on board of large vessels to cross that lake. It would be equally ridiculous to attempt the transportation, on either lake, in small boats. The locks, then, to be of use, must be such as will take up and let down vessels which navigate the lakes. These then are the locks which the state is desired to make, in the expectation that after a vessel from the upper lakes shall have descended into Ontario, she will stop at the difficult and dangerous port of Oswego, instead of going on easily and safely to Ogdensburgh. The inventors and abettors of this project may have the best and most patriotic intentions, but their scheme, if carried into effect, would increase (by the resources of New-York) the wealth of Canada and the power of Great-Britain. Before this subject be dismissed, it may not be improper to compare the expense of transportation on a canal with that on a turnpike road. The cost of carriage from Albany to Utica, by land, is seventy-five cents per hundred, or fifteen dollars per ton. Were the distance one hundred miles, (which it is not) one fifth of it, or twenty miles, would cost three dollars, and forty miles would cost six. The proposed canal will, then, to every useful purpose, produce the same effect as if Lake Erie were brought within forty miles of Hudson's river. In other words, the great lakes, those inland seas, admitting of a navigation with vessels of the largest burthen, and girt by shores exceeding two thousand miles, would be connected with the Atlantic by a portage of only forty miles. The country between Hudson's river and lake Erie, within twenty miles of the canal, a country whose natural advantages are not surpassed by any other of equal extent on the globe, would thus be virtually condensed within a space whose medium distance from the tide waters of the ocean would be but thirty miles. Hence the most important consequences to the prosperity of our country would be produced. Among these, as an item worth millions, may be reckoned the saving of those articles which would otherwise not be produced, or would be suffered to perish from the impracticability of bringing them to market.

It is impossible to ascertain, and is difficult to imagine, how much toll would be collected. The amount of transportation might be estimated by subjecting probabilities to calculation. But, like our advance in numbers and wealth, calculation outruns fancy. Things which twenty years ago a man would have been laughed at for believing, we now see. At that time, the most ardent mind, proceeding on established facts by the unerring rules of arithmetic, was obliged to drop the pen at results which imagination could not embrace. Under circumstances of this sort, there can be no doubt that those microcosmic minds which, habitually occupied in the consideration of what is little, are incapable of discerning what is great, and who already stigmatize the proposed canal as a romantic scheme; will, not unsparingly, distribute the epithets, absurd, ridiculous, chimerical, on the estimate of what it may produce. The commissioners must, nevertheless, have the hardihood to brave the sneers and sarcasms of men, who, with too much pride to study, and too much wit to think, undervalue what they do not understand, and condemn what they cannot comprehend.

Wise legislators will examine and reason upon facts. Viewing the extent and fertility of the country with which this canal is to open a communication, it is not extravagant to suppose that, when settled, its produce will equal the present export of the Atlantic states; because it contains more land, and that land of a superior quality.

Those who contemplate the rapid increase of population, especially in that quarter, must be convinced the period is not remote when those regions will be cultivated. Indeed, they already embrace an extensive tract, which has been subdued by the arm of industry. The amount of articles transported on the canal which will be consumed at home, must, if circumstances should preserve, here, the proportions usual in similar cases, exceed that part of them which is sent abroad. Nevertheless, without extending our view to the commerce of other ports, it is sufficient to take the simple facts, that upwards of 250,000 tons of shipping belong to this state, and that the value of domestic produce exported is upwards of ten million dollars. Now 250,000 tons of goods, at 40 dollars per ton, make up that sum; and grain, at 40 dollars per ton, will not average less than one dollar per bushel. Many of the exported articles are, unquestionably, more valuable, but some are less valuable than grain. Is it then an extravagance to suppose, that the present export of domestic produce is not far short of 250,000 tons; and that it will be doubled by means of the canal? But lest this assumption should be a ground of cavil, let every article of domestic consumption be added. Will it then appear improbable that, twenty years hence, the canal should annually bring down 250,000 tons? It has already been assumed, that a toll of 250 cents per ton should be taken; which, on boats going and returning, will give five dollars per ton, and yield, therefore, one million two hundred and fifty thousand dollars. If this sum be too great, let one fifth be struck off for expenses and diminution of toll on bulky articles of little value. A million remains. Is that million too much, take away four hundred thousand : still there will remain six hundred thousand dollars, the interest, at six per cent. of ten million. Should the canal, therefore, cost even that large sum, it will soon pay the interest, and very soon afterwards, by natural and necessary increase, discharge the principal. Standing on such facts, is it extravagant to believe that New-York may look forward to the receipt (at no distant period) of one million dollars net revenue from this canal? The life of an individual is short. The time is not distant when those who make this report will have passed away. But no term is fixed to the existence of a state; and the first wish of a patriot's heart is that his own may be immortal. But whatever limit may have been assigned to the duration of New-York, by those eternal decrees which established the heavens and the earth, it is hardly to be expected that she will be blotted from the list of political societies before the effects here stated shall have been sensibly felt. And even when, by the flow of that perpetual stream which bears all human institutions away, our constitution shall be dissolved, and our laws be lost, still the descendants of our children's children will remain. The same mountains will stand, the same rivers run. New moral combinations will be formed on the old physical foundations, and the extended line of remote prosperity, after a lapse of two thousand years, and the ravage of repeated revolutions, when the records of history shall have been obliterated, and the tongue of tradition have converted (as in China) the shadowy remembrance of ancient events into childish tales of miracles, this national work shall remain. It shall bear testimony to the genius, the learning, the industry and intelligence of the present age.

The commissioners will not, as they might, dwell on the advantages which the commerce of the state must derive from opening a scene so vast to its incessant activity. Neither will they hint at the political influence which must result from holding a key to the commerce of our western world. This subject, too delicate for discussion, is appropriate to the high consideration of legislative intelligence, and should not, by subordinate agents, be approached but with prudential respect.

The commissioners beg leave to advert to a question which comes more properly within their sphere. What will this canal cost? An important question, but one to which they cannot give a satisfactory answer. They have taken pains to extend investigation, increased the number of surveys, and accumulated the knowledge of facts. In proportion to the information acquired is their conviction, that the plan is practicable, and that the probable expense, compared with the advantage, is moderate, very moderate; for they persist in believing, that it may be accomplished for five or six million of dollars. But they have neither the needful information on which to calculate, nor have they the professional ability. Mr. Weston, an engineer of great and acknowledged talents and experience, who has already been employed in that capacity, both in this state and in Pennsylvania, (in the letter, a part of which has already been cited) says,

"From the perspicuous topographical description, and neat plan and profile of the route of the contemplated canal, I entertain little doubt of the practicability of the measure. Perhaps this is the only question which the legislature should be particularly anxious to have resolved. The expense, be it what it may, is no object when compared with the incalculable benefit; though doubtless it will deserve attention that the money granted be wisely and economically expended. As the survey already made is only what is technically called a running level, much allowance ought to be made with respect to eligibility of the route, and amount of descent. Indeed, to determine the proper line of canal will require the utmost skill of the professional engineer. Its due performance is of vital importance. A small mistake therein, from whatever cause arising, may occasion the needless waste of thousands. Too much care cannot be taken, in the first instance, in exploring the country in every practicable direction, that the final decision may be founded on the result of a comparison of the different routes, as combining shortness of distance with cheapness of execution. The extraordinary regularity in the third or western division, induces me to concur, without hesitation, in the plan recommended by the commissioners, of cutting the canal with an uniform descent, in preference to the usual mode of carrying it on a level. It is true that the latter custom has, almost invariably, been adopted in Europe, but the inducements thereto have generally been the scanty supply of water on the respective summits, the shortness of the different levels, and the tolerably equal amount of tonnage conveyed in opposite directions. None of these circumstances occur in the instance before us, for the supply of water, as is justly observed, is pure and inexhaustible. The length of line from the mouth of the Tonewanta to Cayuga river, is upwards of one hundred and twenty miles; an extent of canal without lockage, unequalled by any now in existence; and the chief amount of tonnage will be always downwards. For these reasons I strongly recommend the adoption of the plan."

Without taking up those hypothetical suggestions which present themselves, on such an occasion, to one whose experience of difficulties, whose knowledge of means, and whose intellectual resources lead to the notice of things which escape common observation, it is evident that the commissioners would be unpardonably presumptuous should they pretend to accuracy of calculation, before sufficient materials are collected to decide the judgment of a professional man, such as Mr. Weston. In speaking of what they hazarded in their first report, he says, "the allowance of twelve and a half cents per yard, for common cutting, is ample, but the estimate of the average quantity of earth to be excavated is underrated." He thinks, too, that the obstructions arising from trees and roots, are greater than was apprehended. The estimate of one thousand dollars per foot, for lockage, is, he says, sufficient, but two dollars per cubic yard, for such masonry as would be required for aqueducts, is too low; and he says, that the expense of double locks, though great, will not, as was supposed, be increased in a two fold ratio. The commissioners perceived that an error had been made in their first report, respecting the cost of an embankment over the outlet of the Cayuga lake; but there is no need of correcting it; because, from the surveys of last season, it appears that the ground between that and the Seneca lake, is too low for so high a level. Unless, therefore, a more favourable route can be discovered, the course by an inclined plane cannot be pursued throughout, and it may become necessary to descend eighty or ninety feet, so as to cross the outlet of the Cayuga by an embankment of moderate height. In this case, the communication from lake Erie will consist—1st. Of an inclined plane to the Seneca outlet: 2d. Of a descent by locks to a lower line: 3d. Of a level canal as far east as the face of the country may indicate: 4th. Of an elevation, at the end of it, by locks, to the Rome summit: 5th. Of a level canal from thence to where descent may become needful: And 6th. Of an inclined plane from that place to a bason near the Hudson river. In the course of so vast a work, much must depend on the nature of the soil; and it may sometimes be cheaper to obtain that which is good, by extending the distance, than to cure natural defects on a more direct course. It may, in some cases, also be advisable to avoid deep cutting, by a circuit, and in others, to cut deep for a shorter line. It is evident that the commissioners cannot make a correct estimate. It is nevertheless their duty to present the best which their information and abilities will permit, taking care that their allowance be rather too high than too low. They assume, then, that the distance may, for the reasons assigned, be lengthened to three hundred and fifty, instead of three hundred miles; or that, to avoid the additional distance, an expense equivalent to it may be encountered. They moreover take the quantity to be excavated, at twice what was mentioned in their first report, viz. at thirty cubic yards, instead of fifteen, and, (to embrace the various contingencies which may occur,) assume the cost of digging, at near twenty cents per cubic yard, instead of twelve and an half, which Mr. Weston, (who founds his opinion on experience acquired by conducting such works, in this country,) considers as amply sufficient for common cutting. This will give ten thousand dollars for every mile; a smaller sum than has been expended by private companies in the United States on some turnpike roads; but fully sufficient, it is believed, to cover any expense which can attend that part of the business.

Thus the cutting of the canal would cost three millions and an half. A descent, by double locks, of eighty or ninety feet, and the consequent ascent to regain a proper level, may be put, in round numbers, at half a million more. Together, four millions. The embankment over the Cayuga outlet, with the needful culverts, may cost three or four hundred thousand, but say half a million, and set the excavation at the Tonewanta at three hundred thousand; the aqueduct over the Genesee, with many smaller aqueducts and culverts, at two hundred thousand; making another million: to which one more may be added, for works at Black Rock rapid, a bason near the Hudson; and those contingencies which necessarily attend an undertaking of such magnitude: in the whole, six million dollars. The commissioners may be mistaken, but they have no reason to believe it will cost so much.

They hasten to the examination of two other points: Has the state sufficient resources? Ought the business to be undertaken now, or postponed to a future day? On the resources of the state they would speak with caution, did the sum bear an important proportion to her wealth. But it is almost a contradiction in terms to suppose, that an expenditure of five or six million, in ten or a dozen years, can be a serious consideration to a million men enjoying one of the richest soils and finest climates under heaven. When, in addition to these leading facts, it is considered that there is scarcely a spot on the globe which possesses such advantages for commerce, and that the number of inhabitants doubles in twenty years; the facility of encountering the object proposed by immediate taxation, is one of those evident propositions which argument may rather obscure than elucidate. If the facility of bearing such a trifling weight required it, proof the most full and complete might be found in every gazette. It will not be pretended that the national revenue (raised by indirect tax on the consumption of less than six million of souls) was oppressive, though it exceeded twelve million of dollars. No man has been galled by, none has felt that burthen, which amounts (nevertheless) to two dollars a head. The share paid by this state, therefore, supposing our average consumption to be the same as that of our neighbours, is two million: four times what would be required to make, in ten or a dozen years, the projected canal. Or let the subject be examined in another point of view. The increase of wealth, in this state, has been (and for evident reasons must be) much more rapid than the increase of inhabitants. The value of property is at least quadrupled in the period during which population is doubled. The present amount of property has been estimated at five hundred million. Perhaps it is more. But should it be much less, time will soon bring it up to, and immediately push it beyond that sum; which may therefore be taken as the standard. Of consequence it follows, that an annual tax of half a million would be but one tenth per cent on the value of real and personal estate. Take the matter again in another point of view, and, admitting that the rich pay the portion of tax that would fall on the poor in a distribution by poll, which (let the tax be laid as it may) must happen, the average contribution will be that of a family in medium circumstances. Wherefore, as a population of one million embraces two hundred thousand families, the average contribution, to raise a revenue of five hundred thousand dollars, would be five dollars from two families. Half of that, or two hundred and fifty cents, is, then, the sum which the head of a family in easy circumstances would be called on to pay, if money were raised by direct tax to carry on the work. In that case, there can be no doubt that a wise legislature would open sources from which adequate revenue could be drawn, not only without injury, but even with advantage to the community. But of this there is no necessity. The credit of this state is sufficient. And if a calculation were made on principles of compound interest, it would appear that the sum to be expended, with interest, until the canal shall yield sufficient revenue, will not exceed what that income would discharge in a reasonable time. If therefore the legislature say, let it be done—it will be done.

But shall they say so now? Shall it be done now, or shall it be postponed to a future day? Those who wish to postpone are respectfully asked, whether they suppose time will render the matter easier? Will it alter the shape of the country? Will the land to be used for the canal cost less when it shall be planted as an orchard, tilled as a garden, or covered by a house, than in its present condition? Will timber and lime be cheaper when wood, now worth nothing, shall have grown dear? Is it certain that the state of public affairs will be as favourable then as now? Will not a fertile imagination invent as good reasons for postponement then as now? And to what day shall it be postponed? Must it be to the day when a legislature shall have *that* patriotism which the idea of postponement pre-supposes the present legislature to want? The commissioners reply with pain to arguments which imply insult. Who is there so base as not to repel the charge of selfishness? What man so cold as not to feel the dignified desire of immortalizing his name, by contributing to a monument of national magnificence, unequalled by any thing on earth?

A state, in its corporate capacity, is an invisible, intellectual existence. If that to which we belong could be reduced to personal identification, could it become an individual, or (that being impossible) could we suppose an individual to be owner of the state, what should we think of his understanding did he hesitate to double the value of his property, and increase his revenue three-fold, without labour, without expense! Yet such is the present case, unless it can be called an expense to run in debt for an object which will pay both principal and interest before the debt falls due. Or suppose this individual to be an infant, would his guardians do their duty should they let slip the golden opportunity so to promote the interest of their ward? But the legislature is guardian of the state.

The foregoing reflections lead to one of the duties enjoined on the commissioners. They were directed to apply to the proprietors of land through which the canal may be carried, for cessions to the people of this state. Such applications have been made, and they have no doubt that the proprietors will contribute in just measure. Some grants would have been already made, but for difficulties in the form originally proposed, and from a desire that they should be proportionate to the tracts the grantors respectively hold.

The commissioners have also in execution of the duties imposed by the act, endeavoured to ascertain whether loans for the object of it can be obtained on the credit of this state. They find that, notwithstanding the scarcity of money consequent on the war which has so long raged in and ravaged Europe, a loan of five million dollars can be obtained, *there*, on the credit of the state, for a term of ten or fifteen years, at an annual interest of six per cent.

The commissioners have inquired the terms on which the western inland lock navigation company will surrender their rights. They ask one hundred and ninety thousand dollars for the shares held by them, exclusive of three hundred and fifty shares held by the state. This being thought too much, they were urged to confine their demand within such moderate bounds as might be acceptable. Copy of their reply, of the 13th February, is in the paper marked No. 5,* hereunto annexed.

The commissioners have, in obedience to the directions of the act, sought for, and will employ a capable engineer as soon as a suitable character can be procured. None but a man of the first rate talents, tried integrity, and approved experience, can be relied on for that previous investigation which is indispensable. In the mean time, they have employed surveyors to continue their search of the best probable route.

It was not within the circle of their duty to ascertain the conveniences presented by nature for an internal navigation northward; wherefore, although there can be no doubt that an examination of the country, with that view, might be useful, they forbore the attempt. In that quarter lies a large and fertile territory peculiarly our own—moreover, it will be seen by the bill annexed to the report of the deputation sent to Washington, that a communication, by means of a canal, between lake Champlain and Hudson's river, is one of those things which are deemed of national importance. It would certainly tend to preserve brotherly affection in the great American family; and the reciprocal advantages which it would procure to New-York and Vermont, would strengthen the bands of our union with the eastern states, so conducive to our mutual prosperity.

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* See Register, vol. iii. p. 378.

All which is humbly submitted.

GOUV. MORRIS,
S. V. RENSSELAER,
DE WITT CLINTON,
SIMEON DE WITT,
W. NORTH,
THOMAS EDDY,
ROB: R. LIVINGSTON.

Albany, March, 1812.

Copy of a Letter of 13*th February,* 1812, *from Robert Bowne, to the Commissioners.*

New-York, 2*d Mo.* 13*th,* 1812.

RESPECTED FRIENDS,

Your letter, of the 24th of August, has been duly considered by the board of directors of the Western Inland Lock Navigation Company; and they have directed me to say, that they cannot, in justice to the stockholders, deviate from the terms before communicated to the commissioners. The company was originally formed in consequence of an act of incorporation, not asked for by themselves. The legislature conceived, very justly, that it would promote the general interest of the state, if an improvement should be made in the Mohawk river, and encouraged the citizens to unite in the undertaking. It may very truly be observed, that most of the stockholders subscribed more from patriotic, than from pecuniary motives, and the result has been, that the state has been greatly benefitted, and the stockholders have received no advantage.

The monies expended, amount to near four hundred and fifty thousand dollars, and less than half that sum is now only demanded. This sacrifice is made on account of the sincere desire the directors feel in promoting a further and more extensive improvement of the Western Inland Navigation, and they presume the commissioners will be satisfied that their present demand is just and reasonable.

I am, with due respect, yours, &c.

ROB. BOWNE, *Pres't.*

To De Witt Clinton and R. Fulton, Esquires.

New-York Free School Society.

The city of New-York has long been particularly distinguished above every other city of the union, for the number and excellence of its humane and charitable institutions. The New-York Hospital, Lying-in Hospital, New-York Alms-House, Humane Society, New-York Free Schools, City Dispensary, and the Manumission Society, though among the principal, are but a part of the establishments devoted to the liberal purposes of humanity, and which do honour to the munificence and character of its inhabitants. An historical account of the origin, progress, and present condition of these societies, and of others of a like kind in our country, has been long desired. It would afford much matter for reflection, and could not fail to contribute to their usefulness, inasmuch as their numerous beneficial effects would become more generally known and appreciated. At this time, we propose to give a short account of the New-Yoak Free School Society.

Many laudable institutions, devoted to the charitable purpose of educating the children of the poor, whose parents belong to particular denominations of christians, have been long established in the city of New-York. But the poor of those denominations who were not provided with establishments of this kind, and those of that class of the community whose parents were the members of no religious society whatever, were, in general, precluded the benefits of gratuitous instruction, until the organization of the New-York Free School, in 1805. In April of that year, agreeably to an application made to the state legislature, an act was passed to incorporate "the society instituted in the city of New-York, for the establishment of a Free School for the education of poor children, who do not belong to, or are not provided for by any religious society." On the first Monday of the ensuing May, a board of trustees of thirteen members was elected, who immediately entered upon the duties assigned them. A plan of education was now to be devised, which should effectually secure the several objects contemplated by the society in their act of incorporation. The justly celebrated system of JOSEPH LANCASTER, which, in England, has already been adopted with the greatest advantage, appeared to the trustees, after due deliberation, to be the best calculated for this purpose; and on the 6th of May, 1806, a school, provided with an able teacher, was opened in Bancker-street. This was the first institution, after the Lancasterian plan, established in the United States.

To enable the society to proceed in their laudable design, a public subscription was opened by the mayor* of New-York, with his characteristic liberality, and by the bounty of the inhabitants of this city, five thousand six hundred and forty-eight dollars were collected. The legislature of the state of New-York, on the ensuing February, appropriated four thousand dollars for the "purpose of erecting a suitable building or buildings, for the instruction of poor children, and every year thereafter, the sum of one thousand dollars, for the purpose of promoting the benevolent objects of the society." The corporation of the city, also, finding the tenement in Bancker-street, inadequate to the accommodation of the society, appropriated a building adjacent to the alms-house, for its immediate convenience, and the sum of five hundred dollars towards putting it in repair, on condition that the society educate fifty children from the number of poor in the alms-house.

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* Dewitt Clinton, Esq.

In December, 1809, this establishment, after having remained in the last mentioned place more than eighteen months, was removed to the elegant and spacious building which it now occupies, in Chatham-street. This building was originally a public arsenal; but by means of the liberality of the corporation, who, upon condition that the institution educate the poor of the alms-house, granted the ground upon which it stands and the sum of fifteen hundred dollars to aid in its alteration, the society was enabled to new model the whole, and put it in its present excellent condition. The upper room, appropriated to the use of the school, is sufficiently large to accommodate six hundred pupils; and on the ground floor, there are convenient apartments for the family of the teacher, for the meeting of the trustees, and for a female school of about one hundred pupils.*

Beside the above establishment, denominated Free School No. 1, the society laid the foundation for a second building, in November, 1810, in Henry-street, on ground liberally granted for that purpose, by Col. H. Rutgers. This building, called Free School No. 2, was completed in the ensuing year, and opened in November, 1811.

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*For the late improvements which decorate the elevation of this building, and the conveniences afforded by its internal arrangement, the public is indebted to John R. Murray, Esq. of this city.

According to the last annual report of the society, published in May, 1812, the school-room, in Chatham-street, contained four hundred and fifty scholars, male and female, in reading, writing, and arithmetic: while the school in Henry-street afforded instruction to three hundred boys and girls, employed in the same branches of learning, after the Lancasterian method. The benefits which will result to the community from an establishment, by which we may shortly expect, at least, one thousand helpless children annually instructed in the principles of morality, and in the elements of useful knowledge, are too obvious to need mention. The enlightened and public spirited founders richly merit the esteem of every friend to humanity. With much pleasure we add, that many institutions of a similar kind have been established in other parts of the United States, upon the plan of the Lancasterian Free School of New-York. For further particulars on this subject, the reader is referred to the excellent address delivered in December, in 1809, by the president of the society, the Hon. Dewitt Clinton.

American Antiquarian Society.

THIS society was incorporated by an act of the legislature of the commonwealth of Massachusetts, passed October 22, 1812. Its object is to collect and preserve the most authentic ancient documents and memorials, and to excite new investigations and researches of learned and ingenious men, upon whatever relates to the tribes, manners, &c. of the aborigines of America, and the subsequent discovery and history of the country.

The first meeting was held at the Exchange Coffee-House in Boston, on Thursday, the 19th of November last, when the following officers were chosen:

Isaiah Thomas, Esq. President; William Dandridge Peck, (Professor of Botany and Natural Philosophy in the University of Cambridge,) Vice-President; Rev. T. M. Harris, Corresponding Secretary; Samuel M. Barnside, Esq. Recording Secretary.

American Academy of Arts.

At a meeting of the American Academy of Arts, held in December, 1812, the following gentlemen were admitted honorary members:

John Singleton Copley, Esq. of *London*; Gabriel W. Stuart, Esq. of *Boston*; Thomas Sully, Esq. Rembrandt Peale, Esq. B. W. Latrobe, Esq. D. Edwin, Esq. *Philadelphia*; ——— Guy, Esq. *Baltimore*; William Dunlap, Esq. Samuel L. Waldo, Esq. William S. Leney, Esq. Alexander Anderson, Esq. J. Jarvis, Esq. John J. Holland, Esq. John Dixey, Esq. *New-York.*

It was recommended, and a resolution taken at the same time, that there be an exhibition of paintings, at the academy, in the the city of New-York, in the month of May next.

Observations on the Weather of the city of New-York, for the months of October, November, and December, 1812.

OCTOBER.

The weather of the month of October was, for the most part, moderate and uniform in its temperature. Considerable quantities of rain fell on the 3d, 4th, 12th, 16th, 23d, 26th, and 28th, accompanied with wind from the N. E. or S. W. The lowest range of the thermometer was on the 9th, when the mercury stood, at 7 A. M. at 46; at 3 P. M. at 55; at 7 P. M. at 54. The highest was on the 16th, when it stood, at 7 A. M. at 64; at 3 P. M. at 71; and at 7 P. M. at 65 degrees.

NOVEMBER.

Though the weather, for the greater part of this month, was remarkably mild and pleasant for the season, the thermometer being frequently as high as 58 and 60, at 3 o'clock P. M. there were several days in which we experienced considerable cold, particularly on the 21st, 22d, 23d, 24th, and 25th. On the evening of the 23d, a very severe gale set in from the S. W. which lasted, with increased violence, until the morning, when the wind came round to the north-west, and the storm abated. Considerable damage was done to a number of buildings in the city, and to the shipping in the harbour; in different parts of the country, also, and to a great extent, much injury was sustained from the same cause. On the 28th and 29th, considerable quantities of rain fell, accompanied with wind, chiefly from the S. E. On the 30th, the mercury stood, at 7 A. M. at 33; at 3 P. M. at 48; and at 7 P. M. at 42.

DECEMBER.

The weather of December was uncommonly mild and pleasant; the thermometer, for the greater number of days, being about 36, at 7 A. M.; at 3 P. M. at 47; at 7 P. M. at 36; and seldom below the freezing point. On the 5th and 6th, a storm from the N. E.; from the 12th to 30th, wind from the N. W. or S. W. On the 31st, the thermometer stood, at 7 A. M. at 35; at 3 P. M. at 44; and at 7 P. M. at 40: wind easterly.

Quarterly Report of the Diseases which prevailed in New-York, during the months of October, November and December, 1812.

FEVERS of the intermittent character, noticed in our last report, were occasionally met with as late as the months of October and November. In two cases they attacked persons far advanced in life, exhibiting in their invasion symptoms of an affection of the brain, which might very properly be denominated the *apoplectic* state of intermittent fever. By blood-letting and blisters, those more alarming symptoms were removed, when the disease readily yielded to bark, wine, and stimulant nourishment.

In another case of intermittent, the disease assumed the form of the double tertian, (tertiana *duplex) :* In this case, the patient being considerably advanced in life, and having for some years past lived in the too free use of vinous and spirituous drinks, the stomach became so irritable that he could scarcely retain the nourishment necessary to sustain him. His strength too was so much reduced, by the daily return of the paroxysms, and the short intermission they afforded, that we considered his life in imminent danger. In this state of things, we had recourse to large doses of bark, administered by injection, with a sufficient quantity of laudanum to enable the intestines to retain it. These being administered every four hours, the return of the paroxysms was prevented, and the same prescription being continued a few days, the patient was entirely restored. This mode of administering the bark is noticed upon this occasion, for the purpose of recalling the attention of the practitioner to this too much neglected mode of exhibiting this valuable febrifuge. To these febrile diseases succeeded the usual inflammatory complaints of the autumn and winter.

We have again had occasion to remark the beneficial effects of an active antiphlogistic treatment in the *forming* stage of *phthisis pulmonalis*. In one case, a young lady was attacked with all the symptoms of the approach of this disease : viz.....Pain in the chest, frequent cough, the expectoration of matter manifestly purulent, the regularly formed hectic, returning at mid-day and at night, the circumscribed flush of the cheek, &c. &c. Having lost ten sisters with consumption, she indulged very little hope of relief. Her mother, in the full expectation of losing her only daughter, whose attack she considered, in all respects, similar to those that had gone before her, almost hesitated to apply for medical aid; but she at length yielded to the advice of her friends. In this case, as the habit of the patient was naturally full, and her strength not much impaired, the lancet was freely and repeatedly employed: by this alone, her cough, pain of the chest, and expectoration were all sensibly diminished. A large blister was then laid upon the chest, and afterwards occasionally renewed; saline cathartics were prescribed, and an expectorant mixture, of the mucilage of gum arabic and tartarised antimony, was administered in divided doses, so as to produce a degree of nausea, and to relax the surface. Its effects were promoted by tepid drinks, consisting of barley water, toast water, &c. Her diet consisted of those articles which are least calculated to add to the excitement of the system. In a word, the case was treated as pure pneumonia, and the result justified the view we have taken of the disease. For, by the remedies prescribed, all affection of the chest has totally disappeared, and the patient is restored to perfect health. This is not a solitary instance of recovery in this disease from the alarming symptoms which have been related: several others of a similar nature, and followed with the same favourable result, might be added in justification of the practice recommended.

A very alarming case of *hemorrhage from the lungs*, has also occurred in the practice of the writer of this article, in which the lancet and cathartics, aided by occasional opiates and nauseating doses of ipecacuanha, have been advantageously employed. The patient was a female, in the 85th year of her age. In the course of three days she lost by hemorrhage, at the least calculation, two quarts of blood. Very nearly as much more, in the same period of time, was taken from her arm, when the hemorrhage ceased. She has since recovered, without any injury to her constitution, from the loss of blood she has sustained.

We have before remarked, that the use of the lancet is especially indicated in the plethora of advanced life, when the excretions are necessarily diminished from the diminished action of the excretory vessels. We cannot withhold the expression of our surprise, that this opinion should be resisted by the practitioners of our city, as we observe it has been in a variety of instances ; and by men too, whose education and whose opportunities of observation should have given them different views of this subject, and have led them to different practice. In three cases, the writer has been called upon to prescribe for patients who laboured under diseases occasioned by such accumulation in the blood vessels. One was affected with vertigo, great propensity to sleep, numbness of the extremities, and disinclination to exercise, whether of body or of mind : in the second, the great oppression at the chest, cough, and difficult respiration, especially upon the slightest exercise, indicated approaching effusion in the cavity of the thorax : in the third, the patient laboured under pains in the region of the uterus, attended with a discharge of a sharp humour from that organ, excoriating the part over which it flowed, accompanied with hemorrhoids, and frequent inclination to pass urine, in consequence of pressure from the overloaded womb. In the first two of these cases, the menses had ceased, and the patients had passed their 50th year. In the third, the catamenia had been sometime suppressed by cold.

In all these cases, the physicians objected to bloodletting, giving as the reason of their objection, that *dropsy* would inevitably be the consequence of bleeding ! But those patients have all been bled, not only once, but repeatedly, and copiously too, and are now in the enjoyment of better health than they have experienced for years. Is it possible that those physicians have yet to learn that dropsy arises as often, nay, more frequently, from increased exhalation, the effect of an overloaded state of the blood vessels, than from diminished absorption, occasioned by loss of tone in the absorbents; that it may proceed from the want of bloodletting, as well as from the excessive use of that remedy? We have no hesitation to say, that this limited view of the animal economy, this dread of the lancet, in our physicians, serves to fill our obituary with consumptions, apoplexies, palsies, dropsies, and other diseases, the effect of plethora and excessive action.

In confirmation of the correctness of this last opinion, as applied to the treatment of dropsy, we could here relate several instances of *hydrothorax*, *ascites*, and *anasarca*, produced by such fulness of the system, and relieved by bloodletting and other depleting remedies. A gentleman of this city, a Mr. C——l, about sixty years old, was unable to lie down for nearly three months, owing to the accumulation of water in the chest, attended with cough, laborious respiration, and diminished secretion of urine, accompanied, at the same time, with a degree of anasarcous swelling of the lower extremities. But by means of repeated bleeding, and the combination of calomel and squills, the symptoms above mentioned have totally disappeared; and by the subsequent use of tonics, he has so far recovered his strength as to return to his usual active occupation.

In another case, the patient, in his seventy-seventh year, of a plethoric habit of body, has, within the last six weeks, been attacked both with ascites and anasarca combined, attended with all the characteristic symptoms of those diseases. As these were induced from the want of exercise, the patient at the same time taking his customary food and stimulant drinks, the depleting treatment was deemed expedient. Fourteen ounces of blood were accordingly taken from the arm, followed with repeated doses of rhubarb and the sulphate of potash. During the use of these remedies, his usual drinks, which consisted of spirits, or brandy and water, as well as the use of animal food, were continued, but in less quantity than ordinary. The tumour of the belly, and swelling of the extremities, were sensibly diminished by the evacuations procured, and by the subsequent use of chalybeates and other tonics, his health is perfectly re-established.

Among other diseases of the last quarter, and which still continue to prevail, are the *measles* and *hooping-cough.* Hitherto, however, these disorders have been so mild that they have, for the most part, readily yielded to the treatment ordinarily pursued.

In addition to the diseases we have occasion to notice in this report, there is one which especially deserves the attention of the physician: it is partial *palsy*, occasioned by the external application of *arsenic.* A very respectable citizen is at this time confined to his chamber, by a paralysis of the muscles of his right arm and neck, occasioned by the use of that poisonous metal, employed for the purpose of removing an encysted tumour on the side of the neck. The tumour was indeed removed, but the patient, by the long continuance of the application, has nearly altogether lost the use of his right arm and the muscles of the back of the neck, and on that side of it from which the tumour was removed. In consequence of this paralysis, his head has, to a degree, been thrown upon his breast, from an inability in the muscles necessary to elevate it. In all other respects he has been and continues free from disease. Similar facts have come to our knowledge of the injurious effects arising from the application of this mineral, as employed for the purpose of removing supposed *cancerous* tumours. The above case is recorded as a caution to our citizens.

We shall conclude this article with the following notice of two cases of disease, occasioned by the poisonous or deleterious effects of honey, as communicated to the public in November last, through the medium of the Evening Post. We, at the same time, refer the reader to a very interesting memoir upon the same subject, published by Dr. Barton, of Philadelphia, in the fifth volume of the American Philosophical Transactions.

New-York, Nov. 14, 1812.

Dear Sir,

Yesterday morning having been called upon to visit two persons who had been poisoned by eating honey, just bought in the Fly-market, it appears to me proper that some public intimation should be given by you to our citizens, that they may be on their guard in purchasing this article.

It is not unusual for WILD honey to be poisonous, in consequence of the bees feeding upon the flowers of poisonous plants, such as the different species of kalmias or dwarf laurels, with which our woods abound ; but it is not usual that DOMESTIC honey, produced in the neighbourhood of thickly settled places, should have this effect ; such, however, was the fact in the present case. Poisonous honey is, generally, of a dark *reddish*, approaching to a crimson colour, and of a *thicker consistence* than that usually sold in the market ; by which circumstance it is commonly designated by hunters, and avoided accordingly ; whereas pure or innocent honey is of a light colour, and viscid, excepting when by age it acquires a dark brown appearance.

I found the patients labouring under a great disturbance of the brain and nervous system, violent vomiting, cold extremities, a livid appearance of the countenance, and pulse reduced to about twenty in a minute ; but by the vomiting thus spontaneously produced, followed by a dose of castor oil, spirituous fomentations applied to the stomach, bowels and extremities, and by dilution with warm spirituous drinks, they were relieved from the alarming symptoms which had been produced. Your's, &c.

D. HOSACK.

WM. COLEMAN, ESQ.

RECENT AMERICAN PUBLICATIONS.

The Philosophy of Experimental Chemistry. By J. Cutbush, M. D. Professor of Chemistry, at St. John's College. Philadelphia. 2 vols. 8vo.

Elements of Botany, or outlines of the Natural History of Vegetables. By Benjamin Smith Barton, M. D. & P. 2d edition. vol. 1. Philadelphia.

The Introductory Lecture of Thomas Cooper, Esq. Professor of Chemistry at Carlisle College, Pennsylvania. Published at the request of the Trustees, with Notes and References. Carlisle. A. Loudon. 8vo.

Medical Inquiries and Observations upon the Diseases of the Mind. By Benjamin Rush, M. D. Professor of the Theory and Practice of Medicine in the University of Pennsylvania, Philadelphia. A. Finley. 8vo.

The Lectures, corrected and improved, which have been delivered for a series of years, in the College of New-Jersey, on the subject of Moral and Political Philosophy. By the Rev. Samuel S. Smith, D. D. LL. D. Trenton. D. Fenton. 2 vols. 8vo.

OBITUARY.

DIED—Lately, at the island of *Madeira*, whither he had gone on account of his health, ROBERT WILLAN, M. D. F. R. S. and author of the celebrated work on Cutaneous Disease.

At *Berlin*, in July last, D. C. WILLDENOW, Professor of Botany, author of the Principles of Botany, Genera Plantarum, &c.

In *France*, M. SONNINI, the distinguished Traveller.

In *Dublin*, RICHARD KIRWAN, Esq. F. R. S. L. & E. M. A. I. P. the celebrated Mineralogist.

In *New-York*, on November 15th, 1812, in the 50th year of his age, JOHN KEMP, LL. D. F. R. S. E. Professor of Mathematics and Natural Philosophy in Columbia College.

In the death of this gentleman, the literary world, and especially Columbia College, has sustained a loss of no ordinary magnitude.

He was born at Achlossan, in Aberdeenshire, North-Britain, April 10th, 1763. His early studies were prosecuted with so much ardour and success, that he received in the spring of 1781, the degree of Master of Arts in Marischal College, Aberdeen; and, after a contest which lasted two days, with unprecedented severity, bore away from competitors of high attainment, the prize of the Mathematical Bursary, founded by Dr. Liddell. Before he had reached his 21st year, he was elected a member of the Royal Society of Edinburgh.

Thus enriched with the treasures, and laden with the honours of science, at a period of life when others have, for the most part, acquired only the elements;

and wearing the wreath of victory over antagonists by whom defeat would have been no disgrace, he came to the United States about the termination of the war for independence. His first settlement was at Dumfries, in Virginia. After a short residence in that place, where he had charge of the academy, he came to New-York, and was immediately employed in Columbia College. His first appointment, on the 4th of April, 1785, was to teach the mathematics for one year. At the expiration of the year, viz. on the 17th of April, 1786, he was chosen professor of that branch of study, and engaged *pro tempore*, to instruct the youth in Natural Philosophy. His perfect and undisputed acquaintance with these departments of science, soon led to their combination in him, although originally designed for two professorships. As soon as the news of his appointment arrived in Britain, the degree of Doctor of Laws was conferred upon him unsolicited, by King's College, Aberdeen: He was also chosen a member of the Agricultural Society in the state of New-York, at the constitution of that body.

His occupations were now sufficiently extensive and laborious: but, notwithstanding, he accepted on the 8th of May, 1795, the additional charge of Professor of Geography, History, and Chronology, the functions of which new trust he continued to exercise, without relaxing his other Academical labours, until he found his strength unequal to efforts from which his inclination never shrunk. His duties, as Professor of Mathematics and Natural Philosophy, he performed until his fatal sickness, with an alacrity of zeal, and a patience of labour, seldom equalled, never surpassed. His course of instruction requiring constant modification from the discoveries and improvements continually making in physical science, demanded and received, a rigour of application, which he carried to every practicable, and to many an imprudent length. His indefatigable industry, unaccompanied with suitable precaution for the preservation of his health, probably laid the foundation of that disease which took him from us, and accelerated the termination of his valuable life. His place cannot be easily supplied. Good mathematicians are few, experimental philosophers are fewer: but the union of both in the same individual is rare and unfrequent.

With the full sense of their loss, the trustees of the college cannot but find some consolation in the benefit which has redounded to the institution and the community, from his uninterrupted services from his twenty-second to his fiftieth year; i. e. the whole of that active life which it pleased God to grant to him. Many a sufferer will bear a tearful testimony to the doctor's benevolence; his other social virtues are known to his friends. We have only to express our unfeigned regret at parting with him in the vigour of his faculties and the height of his usefulness.

NOTICE TO CORRESPONDENTS.

Our readers will perceive that, as usual, we have again considerably exceeded the amount of pages originally proposed for each quarterly number. This we have done, with the view of giving an early insertion to the communications of our correspondents, and of enhancing the value of the Register. Several of our promised articles are yet necessarily postponed until the April number.

For the interesting biography of the late President Johnson, of Columbia College, inserted in our last, and the memoirs of the late Rev. Dr. Miles Cooper, published in the present number, the Editors are indebted to GULIAN C. VERPLANCK, Esq. of this city. Like communications from the same gentleman, will always meet with a prompt insertion in the pages of this work.

Fig. 1.

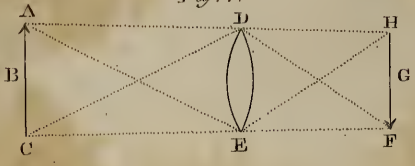
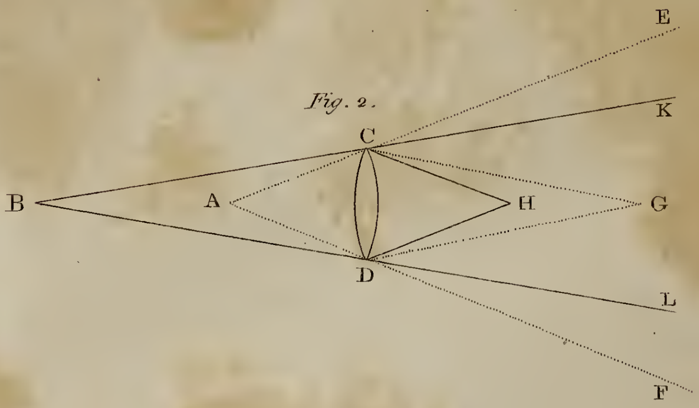


Fig. 2.



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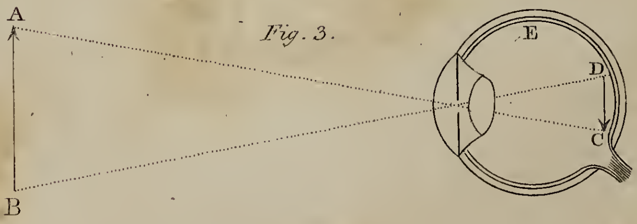

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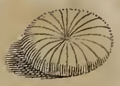

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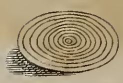

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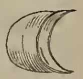
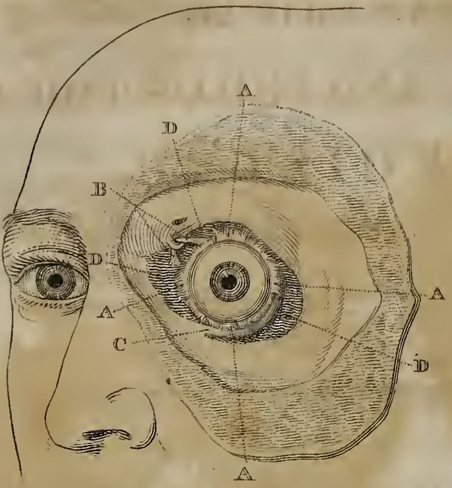


For the Med. and Phil. Register.

Fig. 1.



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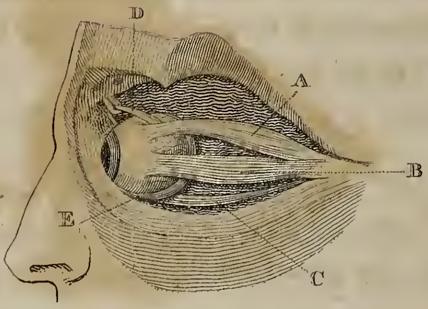

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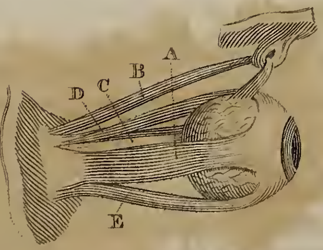

For the Med. and Phil. Register.

THE
AMERICAN
MEDICAL AND PHILOSOPHICAL
REGISTER.
APRIL, 1813.

ORIGINAL COMMUNICATIONS.

I.

OBSERVATIONS ON VISION. *By* DAVID HOSACK, M. D. F. L. S. *Read before the Royal Society of London, May 1st,* 1794, *and published in their Transactions of the same year. Communicated to the Society by* GEORGE PEARSON, M. D. F. R. S. &c.*

(See the annexed Engravings.)

BY what power is the eye enabled to view objects distinctly at different distances? As the pupil is enlarged or diminished according to the greater or less quantity of light, and, in a certain degree, to the distance of the object, it would readily occur that these different changes of the pupil would account for the phenomena in question. Accordingly, anatomists and philosophers, who have written upon this subject, have generally had recourse to this explanation.

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* When the author was prosecuting his medical studies in London, in 1794, the following paper was written, and submitted to the private examination of Sir Joseph Banks, Dr. Andrew Marshall, Dr. George Pearson, the late Dr. Robert Willan, Dr. William Woodville, and Mr. George Adams, the late celebrated optician. By their advice it was communicated to the Royal Society, and was published in the Philosophical Transactions for the same year. Since that time various publications have appeared upon the same subject. In some of these, the writers, passing over in profound silence the observations of the author, have taken to them selves the credit of having given the first illustration of the manner in which the external muscles of the eye operate in adapting it to the different distances of objects. He excepts from this imputation the late Dr. George Gregory and William Nicholson, Esq. The former, in his Economy of Na-

Amusing myself with these changes of the pupil, as a matter of curiosity, by presenting to the eye different objects at different distances, I soon perceived that its contraction and dilatation were irregular and more limited than had been supposed: i. e. that approaching the object nearer the eye, within a certain distance, the pupil not only ceased to contract, but became again dilated; and that beyond a few yards distance, it also ceased to dilate: these circumstances immediately occurred as objections to the above explanation; for were it from the contraction and dilatation of the iris alone that we see objects at different distances, I naturally concluded it should operate regularly to produce its effects; but if to view an object at a few yards distance it be enlarged to the utmost extent, surely it must of itself be insufficient to view one at the distance of several miles; for example, the heavenly bodies.

Another difficulty here presents itself: in viewing the sun, instead of dilating, according to the distance, it contracts, obeying rather the quantity, or intensity of the light, than the distance of the object. Knowing no other obvious power in the eye itself of adapting it to the different distances of objects, it occurred to me to inquire, whether the combined

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ture, and the latter, in his Journal, have candidly noticed, and liberally acknowledged the claims of those who have preceded them. Upon a future occasion the author proposes to submit to the public some additional observations, and a summary view of the facts and illustrations which have lately been adduced in support of the doctrine contained in the present paper. D. H.

action of the external muscles could not have this effect. I first proposed this query to an optician of eminence in London,* and who has written expressly on this subject. I repeated the same question to a celebrated teacher of anatomy.† Encouraged by their replies, I have since attended more particularly to the subject, and hope my inquiries have not been altogether unsuccessful. As introductory to a more distinct view of what I have to advance, it appears necessary to premise the following observations, relative to those general laws of vision which are more particularly connected with this part of the subject, and to which we shall have occasion of frequent reference.

1st. Let A B C, (see plate 1st, fig. 1.) be an object placed before the double convex lens D E, at any distance greater than the radius of the sphere whereof the lens is a segment; the rays which issue from the different points of the object, and fall upon the lens, will be so bent by the refractive power of the glass as to be made to convene at as many other points behind the lens, and at the place of their concourse they will form an image or picture of the object. The distance of the image behind the glass varies in proportion to the distance of the object before the glass; the image approaching as the object recedes, and receding as that approaches. For if we suppose, (fig. 2.) A and B, two radiating points, from which the rays A C, A D, and B C, B D, fall upon the lens C D, it is manifest, that the rays from the nearest point A diverge more than those from the more distant point B, the angle at A being greater than that of B;‡ consequently the rays from A, whose direction is A E and

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* Mr. George Adams.

† Dr. Andrew Marshall, of Thâvies Inn.

‡ Euclid, Book I. Prop. 21.

A F when they pass through the glass, must convene at some point (as G) more distant from the lens than the point H, where the less diverging rays B K and B L from the point B are made to convene; which may also be proved by experiment with the common convex glass.*

It will be necessary to have this proposition in view, as we shall afterwards have occasion to use it in showing, that by varying the distance between the retina and the anterior part of the eye we are enabled to see objects at different distances.

2d. If an object, as A B, (fig 3.) be placed at a proper distance before the eye (E,) the rays which fall from the several points of the object falling upon the cornea pass through the pupil, and will be brought together by the refractive power of the different parts of the eye on as many corresponding points of the retina, and there paint the image of the object, in the same manner as the images of objects placed before a convex lens are painted upon the spectrum, placed at a proper distance behind it; thus the rays which flow from the point A are united on the retina at C, and those which proceed from B are collected at D, and the rays from all the intermediate points are convened at as many intermediate points of the retina; on this union of the rays at the retina depends distinct vision. But supposing the eye of a given form, should the point of union lie beyond the retina, as must be the case with those from the less distant object, agreeable to the preceding proposition; or should they be united before they arrive at the retina, as from the more distant object, it is evident that the picture at the retina must be extremely confused. Now, as the rays which fall upon the eye from radiating points at different distances have different degrees of divergence, and the divergence of the rays increasing as the distance of the radiating point lessens, and, *vice versa*, lessening as that increases; again, as those rays which have greater degrees of divergence, viz. from the nearer objects, require a stronger refractive power to bring them together at a given distance than what is necessary to make those meet which diverge less, it is manifest, that to see objects distinctly at different distances, either the refractive power of the eye must be increased or diminished, or the distance between the iris and retina be varied, corresponding with the different distances of the objects; both of which probably take place, as will hereafter appear.*

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* See Kepler, Diopt. Postul. Smith's Optics, Gravesande, &c.

Having then established these as our premises, we shall next examine the different principles which have been employed for explaining vision at different distances.

Most writers upon this subject refer this power of the eye to the contraction and dilatation of the iris. Within certain limits this would, upon first examination, as already observed, appear to be the case, since the pupil enlarges as the object is further removed from the eye, and again contracts as it is brought near. The extent of this principle I have already pointed out; but I suspect we also err in attributing to the difference of distance what are only effects of different quantities of light, a circumstance in which it is the more easy to commit error, as they are generally proportionate one to the other; i. e. as the object is near we require a less degree of light, and to exclude what is superfluous the iris contracts; but as it is more distant, a greater quantity of light becomes necessary, and the iris dilates: thus far we see the use of the enlargement or diminution of the pupil, as the object is more or less distant. But distinct vision does not consist in the quantity of light alone, though too much or too little would obscure the image.

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* Facile enim intelligitur, quo longius radii adveniunt, eo magis esse parallelos; eo minus ergo differre ab axi, et eo minoribus viribus corneæ et lentis crystallinæ in focum cogi. Ut enim corpus magis distat, ita sub minori angulo radii adveniunt. Contra si corpus conspicuum valde vicinum fuerit, radiorum ab eo advenientium angulus est major, et adeo magis divergentes in oculum incidunt, et viribus egent refringentibus majoribus omnibus densioribus. *Haller. Elem. Phys.* lib. xvi.

It is also necessary that the rays which flow from the object should fall upon the retina in a certain direction, to form a distinct picture; but surely the greater or less quantity of light, the greater or less number of rays, which it is only the property of the iris to diminish or increase, cannot alter the direction.

But there is still another argument to prove, that the contraction or enlargement of the pupil is not of itself sufficient to produce distinct vision at different distances, viz. that the myopes, whose pupil contracts and dilates as in other eyes, are still unable to adapt the eye to different distances; and the means by which this is remedied certainly does not consist in a larger or smaller aperture for the rays to pass through, but a power of altering their direction, which the change in the shape of the eye had rendered too convergent. The same fact is also observable in those who squint; the pupil in both eyes equally contracts and dilates, but still the vision of one eye is less perfect than the other. Another principle upon which it has been attempted to explain this power of the eye, is a supposed change in the convexity of the crystalline lens: the ancients had some obscure notion of it, but it has been lately pursued by Mr. Thomas Young, in a paper published in the Philosophical Transactions of London, for 1793. He has endeavoured to demonstrate the existence of muscles in the crystalline lens, and by their action to account for distinct vision at different distances. This opinion deserves here the more particular examination, having met the attention of the Royal Society, and thereby likely to influence the general opinion upon this subject.

That we may not mistake the meaning of the author, I beg leave to premise his description of the structure of the lens: "The crystalline lens of the ox," he observes, "is an orbicular convex transparent body, composed of a considerable number of similar coats, of which the exterior closely adhere to the interior; each of these coats consists of six muscles, intermixed with a gelatinous substance, and attached to six membranous tendons. Three of these tendons are anterior, three posterior; their length is about two-thirds of the semidiameter of their coat; their arrangement is that of three equal and equidistant rays meeting in the axis of the crystalline; one of the anterior is directed towards the outer angle of the eye, and one of the posterior towards the inner angle; so that the posterior are placed opposite to the middle of the interstices of the anterior, and planes passing through each of the six, and through the axis, would mark on either surface six regular equidistant rays. The muscular fibres arise from both sides of each tendon, they diverge till they reach the greater circumference of the coat, and having passed it, they again converge till they are attached respectively to the sides of the nearest tendons of the opposite surface. The exterior or posterior portion of the six, viewed together, exhibits the appearance of three penniformi-radiated muscles."

In the first place, to say nothing of the transparency of muscles, as an argument against their existence, we must unavoidably suppose, as they have *membranous tendons*, which Mr. Young informs us he distinctly observed, that these tendons cannot possess the same degree of transparency and density with the bellies of these muscles; that is, they must possess some degree of opacity, or certainly he could not have pointed out their membranous structure, nor even the tendon itself, as distinct from the body of the muscle; and if they have not the same density, from their situation, and being of a penniform shape, must there not be some irregularity from the difference in the refraction of those rays which pass through the bellies of those muscles, and those again which pass through their membranous tendons? This structure then, of consequence, cannot be well adapted for a body whose regular shape and transparency are of so much consequence.

Again, Mr. Young describes six muscles in each layer; but Leeuwenhoek, whose authority he admits as accurate, relative to the muscularity of the lens, is certainly more to be attended to in his observation of bodies less minute, viz. as to the layers themselves, in which these muscles are found; which of course are larger, and more easily observed; but, with his accuracy of observation, he has computed, that there are near two thousand laminæ; and according to Mr. Young, supposing each layer to contain six muscles, we have necessarily, in all, twelve thousand muscles; the action of which certainly exceeds human comprehension. I hope this will not be deemed trifling minuteness, as it is a necessary and regular consequence, if we admit their existence as described.

But secondly, as to the existence of these muscles, I cannot avoid expressing a doubt. With the utmost accuracy I was capable of, and with the assistance of the *best* glasses, to my disappointment, I cannot bear witness to the same circumstances related by Mr. Young, but found the lens perfectly transparent: at the same time, lest it might be attributed to the want of habit in looking through glasses, I beg leave to observe, that I have been accustomed to the use of them in the examination of the more minute objects of natural history. After failing with the glasses in the natural viscid state of the lens, I had recourse to another expedient; I exposed different lenses before the fire to a moderate degree of heat, by which they became opaque and dry; in this state it is easy to separate the layers described by Mr. Young; but although not so numerous as noticed by the accurate Leeuwenhoek, still they were too numerous to suppose each to have contained six muscles; for I could have shown distinctly at least fifty layers, without the assistance of a glass, as was readily granted by those to whom I exhibited them.

But a circumstance which would seem to prove that these layers possess no distinct muscles, is, that in this opaque state they are not visible, but consist rather of an almost infinite number of concentric fibres (if the term be at all appropriate) not divided into particular bundles, but similar to as many of the finest hairs of equal thickness, arranged in similar order: see fig. 4, 5, and 6, where the arrangement of the layers and fibres has been painted from the real lens of an ox, and that without the assistance of a glass. To observe this fact, any person may try the experiment at pleasure, and witness the same with the naked eye, even separating many layers and their fibres with the point of a penknife.

This regular structure of layers, and those consisting of concentric fibres, is unquestionably better adapted for the transmission of the rays of light, than the irregular structure of muscles. It may, perhaps, be urged, that the heat to which I exposed the lens may have changed its structure: in answer to that I observe, it was moderate in degree, and regularly applied; of consequence we may presume, as it appeared uniformly opaque, that every part was alike acted upon: but by boiling the lens, where the heat is, without doubt, regularly applied, we observe the same structure.

Thirdly, that it is not from any changes of the lens, and that this is not the most essential organ in viewing objects at different distances, we may also infer from this undeniable fact, that we can, in a great degree, do without it: as after couching or extraction, by which operations all its parts must be destroyed, capsule, ciliary processes, muscles, &c.

Mr. Young asserts, from the authority of Dr. Porterfield, that patients, after the operation of couching, have not the power of accommodating the eye to the different distances of objects; at present, I believe the contrary fact is almost universally asserted.*

Besides, if the other powers of the eye are insufficient to compensate for the loss of this dense medium, the lens, a glass of the same shape answers the purpose, and which certainly does not act by changing its figure. I grant their vision is not so perfect; but we have other circumstances upon which this can be more easily explained; which will be particularly noticed under the next head. It may not be improper also to observe, that the specific gravity of the crystalline, compared with that of the vitreous humour, and of consequence, its density and power of refraction, is not so great as has been generally believed. Dr. Bryant Robinson, by the hydrostatic balance, found it to be nearly as eleven to ten. I have also examined them with the instrument of Mr. Schmeisser, lately presented to the Royal Society, and found the same result; of consequence, the crystalline lens is not so essentially necessary for vision as has been represented; especially, as it is also probable, that upon removing it, the place which it occupied is again filled by the vitreous humour, whose power of refraction is nearly equal. At the same time we cannot suppose the lens an unnecessary organ in the eye, for nature produces nothing in vain; but that it is not of that indispensable importance, which writers upon optics have taught us to believe.

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* "Et lente ob cataractam extracta vel deposita oculum tamen ad varias distantias videre, ut in nobili viro video absque ullo experimento quo eam facultatem recuperaverit. Etsi enim tunc ob diminutas vires quæ radios uniunt, æger lente vitrea opus habet, eadem tamen lens in omni distantia sufficit."—*Haller. El. Phys.*

"La lentille cristalline n'est cependant point de première necessité pour la vision. Aujourd'hui, dans l'opération de la cataracte on l'enlève entièrement, et la vision n'en souffre point."—*De la Metherie Vues Physiologiques.* See also *De la Hire*, *Hamberger's Physiolog.*

Fourthly. Mr. Young tells us, he has not yet had an opportunity of examining the human crystalline; and grants, that from the spherical form of it in the fish, such a change as he attributes to the lens in quadrupeds cannot take place in that class of animals. The lenses which I have examined in the manner above mentioned were the human, those of the ox, the sheep, the rabbit, and the fish, and in all the same lamellated structure is observable; even in the spherical lens of the fish these lamellæ are equally distinct, but without the smallest appearance of a muscle.

From these circumstances I cannot avoid the conclusion, that they do not exist; at the same time I am persuaded that Mr. Young met with appearances which he supposed were muscles; but I am satisfied he will readily acknowledge, that the examination of the crystalline lens in its viscid glutinous state, is not only attended with much difficulty, but that the smallest change of circumstances might lead to error; which I apprehend may, probably, have been the case in that instance.

Upon examining it after boiling, or exposing it to a gradual degree of heat before the fire, when it may be handled with freedom, he will readily observe (without a glass) the numerous lamellæ, and the arrangement of their fibres, which I have described.

Another opinion has been sanctioned by many respectable writers, of the effects of the ciliary processes in changing the shape and situation of the lens; some supposed it to possess the power of changing the figure of the crystalline, rendering it more or less convex;[*] others, that it removed it nearer to the cornea;[†] and others, that it removed it nearer the retina.[‡]

The advocates for these different opinions all agree in attributing these effects to a supposed muscularity of the ciliary processes.

Of the structure of these processes Haller observes, "In omni certe animalium genere processus ciliares absque ulla musculosa sunt fabrica, mere vasculosi vasculis serpentinis percursi molli facti membrana;" which structure, I believe, at present is universally admitted. But even supposing them muscular, such is their delicacy of structure, their attachment, and direction, that we cannot possibly conceive them adequate to the effects ascribed to them. Besides, what we observed of the muscles of the lens itself, also applies to the processes, viz. that they may be destroyed, as in couching or extraction, and yet the eye be capable of adapting itself to the different distances of objects. For a more full refutation of these opinions, see Haller's large work.

The Situation, Structure, and Action of the external Muscles.[§]

Upon carefully removing the eyelids, with their muscles, we are presented with the muscles of the eye itself, which are six in number; four called recti, or straight; and two oblique; so named from their direction, (see plate IId. fig. 1.) A A A A, the tendons of the recti muscles, where they are inserted into the sclerotic coat, at the anterior part of the eye. B, the superior oblique, or trochlearis, as sometimes called, from its passing through the loop or pulley connected to the lower angle of the orbiter notch in the os frontis; it passes under the superior rectus muscle, and backwards to the posterior part of the eye, where it is inserted by a broad flat tendon into the sclerotic coat. C, the inferior oblique, arising tendinous from the edge of the orbiter process of the superior maxillary bone, passes strong and fleshy over the inferior rectus, and backwards under the abductor to the posterior part of the eye, where it is also inserted by a broad flat tendon into the sclerotic coat. D D D, the fat in which the eye is lodged. In fig. 2. we have removed the bones forming the external side of the orbit, with a portion of the fat, by which we have a distinct view of the abductor. A B C, three of the recti muscles, arising from the back part of the orbit, passing strong, broad, and fleshy over the ball of the eye, and inserted by flat, broad tendons into the sclerotic coat, at its anterior part. D, the tendon of the superior oblique muscle. E, the inferior oblique; fig. 3. A, the abductor of the eye. B, the fleshy belly of the superior oblique, arising strong, tendinous, and fleshy from the back part of the orbit. C, the optic nerve. D and E, the recti muscles.

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[*] Des Cartes, Scheinerus, Bidious, Mollinettus, Sanctorius, Jurin.

[†] Kepler, Zinn, Porterfield.

[‡] La Chariere, Perrault, Hartsoeker, Brisseau, and Derham.

[§] For the accuracy of the representation I have annexed (see plate IId.) I can vouch, having been at much pains in the dissection; from which I had the painting taken by a most accurate hand, Mr. S. Edwards, a gentleman well known for his abilities in the plates of that admirable work, the Flora Londinensis.

The use ascribed to these different muscles, is that of changing the direction of the eye, to turn it upwards, downwards, laterally, or in any of the intermediate directions, accommodated either to the different situation of objects, or to express the different passions of the mind, for which they are peculiarly adapted. But is it inconsistent with the general laws of nature, or even with the animal economy, that from their combination they should have a different action, and thus an additional use? To illustrate this we need only witness the action of almost any set of muscles in the body:

for example, in lifting a weight, the combined action of the muscles of the arm, shoulder, and chest, is different from the individual action of either set, or of any individual muscle; or an instance nearer our purpose may be adduced, viz. the actions of the muscles of the chest and belly, making a compression upon the viscera, as in the discharge of urine, fæces, &c. But to question this fact would be to question the influence of the will in any one of the almost infinite variety of motions in the human body.

I presume, therefore, it will be admitted, that we have the same power over these muscles of the eye as of others, and I believe we are no less sensible of their combined action; for example, after viewing an object at the distance of half a mile, if we direct our attention to an object but ten feet distance, every person must be sensible of some exertion; and if our attention be continued but for a short time, a degree of uneasiness and even pain in the ball of the eye is experienced; if, again, we view an object within the focal distance, i. e. within six or seven inches, such is the intensity of the pain that the exertion can be continued but a very short time, and we again relieve it by looking at the more distant objects; this, I believe, must be the experience of every person, whose eyes are in the natural and healthy state, and accordingly it has been observed by almost every writer upon optics.

But the power of this combination, even from analogy, appears too obvious to need further illustration. I shall therefore next endeavour to point out their precise action.

Supposing the eye in its horizontal natural position; I see an object distinctly at the distance of six feet, the picture of the object falls exactly upon the retina; I now direct my attention to an object at the distance of six inches, as nearly as possible in the same line; although the rays from the first object still fall upon my eye, while viewing the second, it does not form a distinct picture on the retina, although at the same distance as before, which shows that the eye has undergone some change; for while I was viewing the first object I did not see the second distinctly, although in the same line: and now, *vice versa*, I see the second distinctly, and not the first; the rays from the first, therefore, as they still fall upon the eye, must either meet before or behind the retina; but we have shown that the rays from the more distant object convene sooner than those from the less distant object, therefore the picture of the object at six feet falls before, while the other forms a distinct image upon the retina; but as my eye is still in the same place as at first, the retina has by some means or other been removed to a greater distance from the fore part of the eye to receive the picture of the nearer object, agreeable to the principle, page 396. From which it is evident, that to see the less distant object, either the retina should be removed to a greater distance, or the refracting power of the media should be increased: but I hope we have shown that the lens, which is the greater refracting medium, has no power of changing itself. Let us next inquire, if the external muscles, the only remaining power the eye possesses, are capable of producing these changes. With respect to the anterior part of the eye, we have seen the situation of those muscles; the recti strong, broad, and flat, arising from the back part of the orbit, passing over the ball as over a pully, and inserted by broad flat tendons at the anterior part of the eye; the oblique inserted toward the posterior part, also by broad flat tendons; when they act jointly, the eye being in its horizontal position, it is obvious, as every muscle in action contracts itself, the four recti by their combination must necessarily make a compression upon the different parts of the eye, and thus elongate its axis, while the oblique muscles serve to keep the eye in its proper direction and situation. For my own part, I have no more difficulty in conceiving of this combination of those muscles than I have at present of the different flexors of my fingers in holding my pen. But other corresponding effects are also produced by this action; not only the distance between the anterior and posterior parts of the eye is increased, but of consequence, the convexity of the cornea, from its great elasticity, is also increased, and that in proportion to the degree of pressure, by which the rays of light passing through it are thence necessarily more converged. But another effect, and one not inconsiderable, is, that by this elongation of the eye, the media, viz. the aqueous, crystalline, and vitreous humours through which the rays pass, are also lengthened, of consequence their powers of refraction are proportionably increased; all which correspond with the general principle. It may, however, be said, that as the four recti muscles are larger and stronger than the two oblique, the action of the former would overcome that of the latter, and thus draw back the whole globe of the eye; but does not the fat at the posterior part of the orbit also afford a resistance to the too great action of the recti muscles, especially as it is of a firm consistence, and the eye rests immediately upon it? Admitting then that this is the operation of the external muscles when in a state of contraction, it is also to be observed, we have the same power of relaxing them, in proportion to the greater distance of the object, until we arrive at the utmost extent of indolent vision.

But, as a further testimony of what has been advanced, I had recourse to the following experiment, which will show that the eye is easily compressible, and that the effects produced correspond with the principles I have endeavoured to illustrate.

With the common *speculum oculi* I made a very moderate degree of pressure upon my eye, while directing my attention to an object at the distance of about twenty yards; I saw it distinctly, as also the different intermediate objects; but endeavouring to look beyond it, every thing appeared confused. I then increased the pressure considerably, in consequence of which I was enabled to see objects distinctly at a much nearer than the natural focal distance; for example, I held before my eye, at the distance of about two inches, a printed book; in the natural state of the eye I could neither distinguish the lines nor letters; but upon making pressure with the speculum I was enabled to distinguish both lines and letters of the book with ease.

Such then I conceive to be the action and effects of the external muscles, and which I apprehend will also apply in explaining many other phenomena of vision; some of those it will not be improper at present briefly to notice.

First. May not the actions of those muscles have more or less effect in producing the changes of vision which take place in the different periods of life? At the same time the original conformation of the eye, the diminution of its humours, and, probably, of the quantity of fat upon which the eye is lodged, are also to be taken into the account. But the external muscles becoming irregular and debilitated by old age, in common with every other muscle of the body, are not only incapable of compensating for these losses, but cannot even perform their wonted action, and thus necessarily have considerable influence in impairing vision. Again, does not the habit of long sight so remarkable in sailors and sportsmen, who are much accustomed to view objects at a great distance, and that of short sight, as of watchmakers, seal-cutters, &c. admit of an easy solution upon this principle? as we know of no part of the body so susceptible of an habitual action as the muscular fibre.

Secondly. How are we to account for the weaker action of one eye in the case of squinting? That this is the fact has been well ascertained; Dr. Reid* upon this subject observes, that he has examined above twenty persons who squinted, and found in all of them a defect in the sight of one eye. Porterfield and Jurin have made the same observation.

The distorted position of the eye has, I believe, been generally attributed to the external muscles; but no satisfactory reason has ever been given why the eye, directed towards an object, does not see it distinctly at the same distance as with the other. The state of the iris here cannot explain it, as it contracts and dilates in common with the other; nor can we suppose any muscles the lens might possess could have any effect, as they are not at all connected with the nature of this disease.

But the action of the external muscles, I apprehend, will afford us a satisfactory explanation. When the eye is turned from its natural direction, for example, towards the inner canthus, it is obvious that the *adductor* muscle is shortened, and its antagonist, the *abductor*, lengthened; consequently, as the abductor has not the same power of contracting itself with the adductor, when the eye is directed towards an object, their power of action being different and irregular, the compression made upon the eye and its humours must also be equally irregular, and therefore insufficient to produce the regular changes in the refraction and shape of the eye we have shown to be necessary in adapting it to the different distances of objects. The effects produced by making a partial pressure upon the eye with the finger, or *speculum oculi*, before noticed, would also appear to favour this explanation.

Thirdly. May it not in part be owing to the loss of this combined action of the external muscles, and the difficulty of recovering it, that the operation of couching is sometimes unsuccessful, especially when the cataract has been of long standing? This cannot be attributed to the iris, for it, perhaps, dilates and contracts as before: nor to the muscles of the lens, for they are removed; nor to the state of the nerve, for it is still sensible to light; and yet the patient cannot see objects distinctly; and it is not an uncommon circumstance, even when the operation succeeds, that the sight is slowly and gradually recovered. Instances have occurred, Mr. Bell* observes, of the sight becoming gradually better for several months after the operation.

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* See his Inquiry into the Human Mind, page 322.

When we have been long out of the habit of combining our muscles in almost any one action of life, as walking, dancing, or playing upon a musical instrument, we in a great measure lose the combination, and find a difficulty in recovering it, in proportion to the length of time we had been deprived of it; but the individual action of each muscle remains as before. Thus, probably, with the muscles of the eye. A variety of facts of a similar nature must present themselves to every person conversant in the science of optics, which may admit of a similar explanation.

I have thus endeavoured, first, to point out the limited action of the iris, and of consequence the insufficiency of this action for explaining vision. Secondly, to prove that the lens possesses no power of changing its form to the different distances of objects. Thirdly, that to see objects at different distances, corresponding changes of distance should be produced between the retina and the anterior part of the eye, as also in the refracting powers of the media through which the rays of light are to pass. And, fourthly, that the combined action of the external muscles is not only capable of producing these effects, but that from their situation and structure they are also peculiarly adapted to produce them.

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* See his System of Surgery.

Is it not then consistent with every principle in the economy of nature and philosophy, seeing the imperfections of the principles which have hitherto been employed in explaining the phenomena in question, to adopt the one before us, until (agreeably to one of the established rules in philosophizing) other phenomena occur, by which it may be rendered either more general, or liable to objections?

I have now finished what was proposed. I have declined entering into an extensive view of the structure of the eye, or any of the general principles of optics, as those subjects have been more ably treated in the works already cited, and thus would certainly have destroyed every claim to attention, which these few pages in their present form may possibly possess; and if I should be so fortunate as to succeed in establishing the principle I have proposed, for explaining the phenomena dependent upon this more important organ of our body (if any part possesses a pre-eminence in nature,) I also hope it may, in abler hands, admit of some practical application, in alleviating the diseases to which its delicate organization so particularly exposes it.*

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* Since the above pages have been written, I have found, upon consulting some of the earliest writers, that the effects of the external muscles did not altogether escape their attention; at the same time they had no distant idea of their action: I must therefore disclaim the originality of the thought, although I had never met with it before the circumstances already noticed, of the insufficiency of the iris, had suggested it. If, however, I have succeeded in pointing out the precise action of those muscles, and its application to the general principles of vision, in which, I believe, I have never been anticipated, it will be the height of my wishes.

II.

Description and Analysis of the Meteoric Stone, *which fell at Weston, in North America, the 4th December,* 1807. *Communicated to* David Hosack M. D. &c. *by* David Bailie Warden, *Esquire, Consul General of the United States, at Paris.*

Description.

This aerolite presents, in general, the same characters as those hitherto examined. It is enveloped with a thin, black, and uneven crust. The mass is principally composed of a granular substance, which breaks easily: it has an earthy appearance, and a grey cinerous colour, which, in certain parts, passes to a whitish grey.

Those portions which possess this last tint, and which are as if glued in the mass, have a round form, so that they are distinguished by circular or oval spots which interrupt the general colour. Its specific gravity is about 3. 3; the sharp parts cut glass.

In observing the fractured parts of the stone, we there perceive: 1st. Particular globules which are easily detached; little cells in which they are placed, and of which the substance is like that of the stone itself, except that its grain is more compact, and its fracture smoother.

In exposing it to a strong light, we see traces of a lamellar tissue: 2d. Grains of metallic iron, which, by polish, assume a whiteness, yield to the hammer, and attract very sensibly the magnetic needle: 3d. Grains of oxyded iron of the colour of rust. 4th. Metallic particles extremely small, of a silver white colour which seem to be of iron; and this opinion is strengthened, when we recollect that the native iron of Kamerdorf, and that of pseudo-volcanic origin, present in certain parts, a silver white colour.

I have not seen any mark of sulphurated iron, although I found it by the analysis, as will hereafter appear.

All the fragments of this stone have a magnetic property, but without polarity, and the iron, which is very visible in certain parts, is so disseminated in all others where it escapes the eye, that the property of which there is question, manifests itself even in the smallest particles isolated by trituration.

I found it even in the globulous bodies which are first mentioned.

Pieces of this stone weighed from six to even one hundred pounds.

ANALYSIS.

Having ascertained, by preliminary essays, that this stone contained chrome, nickel, iron, manganese, lime, magnesia, silex, alumine, and sulphur; I employed the following method of separating each of these substances.

1st. One hundred grains of this stone, from which the metallic iron was isolated, by means of the magnetic needle, after being pulverised, were treated with a considerable quantity of water, through which was passed a current of oxygenated muriatic gas: by this means, the sulphur being converted into sulphuric acid, by the oxygen of the oxygenated muriatic acid, sulphats and muriats were obtained.

2d. The whole was evaporated to siccity, and treated with two parts of alkoholic potash: after fusion the mass presented a sallow colour, and its dissolution in water was of a fine yellow.

3d. The portions of the mass, which remained undissolved in water, were dissolved in an excess of muriatic acid, and being evaporated to siccity, I separated the silex, which, after calcination, weighed forty-one grains.

4th. Into the muriatic acid was poured carbonat of potash in excess, which formed an abundant precipitate after an hour of ebullition.

5th. The liquor contained sulphat and chromat of potash; after being made acid, it was precipitated by muriat of barytes in excess, and there was obtained sulphat of barytes, corresponding to two and a third of sulphur; and saturating afterwards the excess of acid by an alkali, I obtained chromat of barytes, corresponding to three and a third of chromic acid.

6th. The precipitate, No. 4, was submitted (still in a humid state) to the action of alkoholic potash, and after filtration, the liquor gave, by means of the muriat of ammoniac, a grain of alumine.

7th. Ammoniac was poured into the remains of the precipitate, after having dissolved it in an excess of muriatic acid. The oxyds of iron and manganese were precipitated, and the lime and magnesia remained in dissolution.

8th. The precipitate was isolated, and the lime separated from the magnesia by the oxalat of ammoniac, which, after calcination, weighed three grains.

The magnesia was precipitated by caustic potash: it weighed, after desiccation, sixteen grains.

9th. The oxyds of iron and manganese were dissolved in an excess of muriatic acid, and pouring, by little and little, saturated carbonat of potash into the dissolution until red floccules were visible, and then leaving it to repose twenty-four hours, all the carbonat of iron precipitated, whilst that of the manganese remained in the liquor.

The carbonat of iron, after calcination, gave twenty-four grains of oxyd: and that of manganese, deposited by ebullition, by the same operation, only one and a third.—Which makes in all:—

Silex,	41
Sulphur,	$2\frac{1}{3}$
Chromic acid,	$2\frac{1}{3}$
Alumine,	1
Magnesia,	16
Lime,	3
Oxyd of iron,	30
Oxyd of manganese,	$1\frac{1}{3}$
Loss,	3
Total,	100

Analysis of the metallic iron isolated by the magnetic needle.—1st. One hundred parts of this stone gave twenty-eight of metallic iron, which is very brittle, owing to the nickel it contains. 2d. Forty grains of this iron were dissolved in nitro-muriatic acid, and by means of ammoniac in excess, the oxyd of iron was separated, which weighed forty-five grains. The dissolution of nickel in this alkali was evaporated to siccity to expel all the ammoniac. The oxyd of nickel was re-dissolved by muriatic acid, and precipitated by the prussiat of potash, which gave one grain of the prussiat of nickel. We may infer, from these physical characters and results of chemical analysis, that this stone is like all other meteoric stones hitherto known.

III.

An Account of the Origin and Nature of the YELLOW FEVER, *as it prevailed in the town of St. Mary's, Georgia, in the Autumn of* 1808. *In a Letter from* JAMES SEAGROVE, *Esq. Chairman of the Board of Health, to* DAVID HOSACK, M. D. *&c.**

Town of St. Mary's, in Georgia, July 20th, 1809.

Dear Sir,

YOUR letter of the 23d of November last, did not reach me until within a month; how to account for its being so long on the way I am at a loss. I received one from our friend Judge Pendleton, that has been the same time delayed.

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* In offering to the public the very interesting letter of Mr. Seagrove, on the yellow fever of St. Mary's, the editors cannot refrain from accompanying it with one or two remarks. From a perusal of this letter the reader will perceive that the author was an eye witness to what he relates, and that from the facts which have come to his own knowledge, he is induced to pronounce the disease which he describes, as peculiar in its character, and of a *contagious* nature. An account of the same disease, and by the same writer, purporting to be a letter to Dr. Nicholas Bayard, was inserted in the Medical Repository, Hex. IIId. vol. 1st. p. 135. In this communication, however, not the least notice is taken of the contagious character of the disease, and every thing relative to the specific form of the disorder omitted. That the article published in the Medical Repository, was originally in substance the same as that now printed in the Register, we have the fullest assurance from the testimony of the author himself in a communication to one of the editors of this Journal. We must consequently account for the imperfect statement given by the editors of the Repository, to a wilful suppression of some of the most material parts of the letter. How far, we ask, does such conduct become the character of those who profess to be actuated by a sincere desire for truth, and that too on a subject vitally interesting to every member of the community? What value, too, it may be asked, is to be attached to the various accounts which have been published in that work, of the yellow fever as it has prevailed in different parts of our country? We can scarcely withhold the expression of our indignation at this uncandid and disingenuous conduct! But we leave the reader to his own reflections. ED.

This will account to you, for what you might have conceived a want of attention to your application. I have been much from home since I received your favour, or should have wrote ere this, giving you such information respecting the sickness that prevailed in this town last fall, as was in my power: but as I am unacquainted with medical matters, as well as the technical terms, I fear my relation of it will be but ill understood; however, I hope there will be allowance made on that score, whilst I state absolute facts.

During the spring and summer of 1808, the town of St. Mary's was, (as usual,) remarkably healthy. During the latter part of August, and part of September, there were continued heavy rains, which filled all the low and level grounds, and water lay on the surface of the earth for some time, rotting the grass, weeds, and vegetables; the water in the wells became bad and offensive to the smell: yet no change in the health of the inhabitants was observed until about the 5th of September, when one of our coasting packets between this and Savannah, called the Polly, commanded by one Fowler, arrived with two sailors sick on board, and owing to the ignorance and neglect of the health officer, Dr. Ross, and the city council, these sick men were allowed to be landed, and lodged in a family in the centre of the town. One of these men died a few hours after landing; the other lingered some little time, and also died, both of them with the same kind of disorder that afterwards proved so fatal to the inhabitants. Two persons who attended these sick, viz. James Lindsay, and a free mulatto named Sip, both died: Lindsay on the 9th September, and on the 10th the mulatto. The whole family in the lodging were taken with the same fever, and most of them died. The vessel that brought the sick seamen had been employed during the spring and summer, in transporting corn and different kinds of provisions, and was in an exceedingly foul state, so much so, that there was no remaining on board from the smell of rotton corn, &c. The consequence was that two more of her crew died on board afterwards at Cumberland Island. The disorder spread rapidly after the death of Lindsay and Sip, and having traced its progress from its first appearance, I have no hesitation in believing and saying, that the fire was lighted by the landing of the two sailors from the before-mentioned vessel. The heavy rains, the flat situation of the place, the filthy state of the town generally, and a quantity of rotten provisions stored by a set of unprincipled speculators and strangers, for the purpose of smuggling to Florida, contributed not a little to the ready receiving and promoting the contagion; these are my candid sentiments of the commencement of the sickness.

I shall now state to you the symptoms and progress of the disorder, as far as my observation went. The unfortunate person was generally taken with a pain over the eyes, the back of the head, a pain in the back, a chill as if an ague fit was coming on; thence great oppression in the breast, with a smart fever, but the pulse not very high. The patient soon became delirious, which generally took place from five to eight hours from the first symptoms; a great difficulty in keeping the body open, or getting a passage. It appeared in several cases, that the passage from the upper to the lower part of the body was nearly closed; so that medicine had but little or no effect in clearing the bowels, or opening a passage. I knew a gentleman (in my house) to have taken upwards of one hundred grains of good calomel, and the usual quantity of jalap, frequent injections, and the warm bath, without effect, until a large blister on the pit of the stomach, and frequent rubbing with hot brandy and laudanum gave relief. You will observe by the list of cases now sent you, that several died in twenty-four or forty-eight hours from the first symptoms of the fever, and from being hearty and well. In almost every case of death the black vomit, or bleeding at the nose and mouth, took place before the patient's decease.

The mode of treating the disorder by Dr. Turner, with whom I was intimate, and with whom I visited the sick several times every day and night, was pretty much as follows: The doctor generally recommended to the inhabitants whilst well, and afterwards, to avoid animal food as much as possible; to live low, and to avoid ardent spirits; to drink freely of lemonade as their common drink. When seized with the disorder, he generally prescribed calomel and jalap, and sometimes glauber salts, with a little tart. emet. always using every endeavour to keep the body open and cleanse the bowels. He used the warm bath, clysters and blisters; and rubbing with warm brandy and laudanum the pit of the stomach had, in several cases, a good effect. Doctor Turner was bred in Rhode-Island, and a regular, though young physician; he was the only valuable character we had in that line. But unfortunately he, like many gentlemen of your profession, would not allow (for a long while) that the disease was contagious; but poor young man, he changed his opinion before he fell himself a victim.

A monstrous quack, (our health officer,) and a Dr. Hitchcock from Connecticut, made free use of mercury, external and internal, so as to salivate all their patients. How successful they were in their practice my list will explain. Bleeding was not used to my knowledge, except that Dr. Turner bled himself when first taken; he was of a full habit and in great health. A Dr. Stowel, (who arrived near the close of the sickness,) bled a young gentleman named Hammel; both these that were bled died. Not a single instance is there of the disorder communicating out of the town, even within a mile; but it is a melancholy fact, that not a single person who caught the infection in town, and went to the country, but what died.

Thus I have detailed to you what I conceived most material and essential to your inquiries. I shall now give you some detached observations which may still further serve to elucidate the nature of this melancholy disorder.

As soon as the breath was out of the sick, the body assumed a yellow, then a purple, and after, a black colour; and in a few minutes was in a state of putrefaction. The sick (generally) recovered their senses before death, the pain and fever ceased, as I suppose, when a mortification took place. The Africans and native blacks were as subject to the disease as the whites, but it was not so fatal to them. As an instance of this I will mention how subject they were. I had no less than seven persons in my family taken with the fever, and only myself able to attend them; all the whites and my family servants being down, I sent to my plantation, thirty miles from town, and had two men and two women brought to assist, and in twenty-four hours after arrival, three of them became affected with the same fever; all of them recovered though they had it severely. I here beg leave to mention an experiment I made, and I, verily believe, with success. I had been in the habit, for some years past, of using the *eau de luce*, prepared by a French apothecary in Savannah, in the cure of the bite of the rattle snake, and in so doing have unquestionably saved the lives of five persons, when all other medical aid had failed. Seeing the cases desperate, and fearing that our doctors were not masters of the disorder, I thought I would try the eau de luce on some of my people; but I first consulted Dr. Turner, who said it could do no harm. I accordingly administered it to eight or ten negroes and a white girl, giving them from fifty to sixty drops in a wine glass of water every half hour, and continued it from eight to twelve hours, and all of them recovered. I am of opinion that this medicine, given in the early stage of the yellow fever, would have a good effect. I was absent from the 1st to the 26th of September, and knew nothing of the sickness until I landed in town with my family; I could not then reconcile my feelings to retreat and leave so distressing a scene. The town is governed by an intendant and council, possessing ample powers, but they most shamefully neglected and abandoned their duty, without taking a single step toward relieving the sick, or stopping the spread of the contagion. Finding this the case, as the senior justice of the council, I called a meeting of the inhabitants on the 28th September, who appointed five of the citizens as a committee of health, who immediately commenced their duty; and on the morning of the 29th, reported thirty white persons and twenty-four blacks very sick with the prevailing fever. This number will appear small in such a population as New-York; until I state to you, that from a census taken a year before, the number of white persons was three hundred and fifty, of blacks one hundred and fifty, and that several of that number were absent when the sickness began. The first step of the committee was to provide a hospital, nurses, medicine, and nourishment for the indigent sick; next, to remove all that were well out of the way of the disease, as they soon discovered it could not be stopped as long as there were subjects to work on, or until cold weather came. By the 5th of October there did not remain more than one hundred white persons in town sick and well; of that number eighty-seven took the fever, so that at one time we could not muster more than ten well white men in town exclusive of some Frenchmen. And now I mention French people, I think it well to remark, that there were in town, during the whole time of the sickness, about twenty of these people, and that, not a single one of them had the fever, though the men exposed themselves by visiting and nourishing the sick. I attribute this, in a great measure, to their mode of living, and being formerly inhabitants of the French islands. They used no animal food, lived chiefly on vegetables, drank lemonade in great quantities, made as follows: take the sour orange or lemon, peel it quite clean, cut in quarters, take out all the seeds, then put them into a vessel, put as much sugar as will make it pleasant, pour boiling water thereon and let the vessel be well covered, and stand in that condition until cold; thus prepared it is pleasant drink for the sick. The French people disapproved of mercury in any way. They saved a young lady, (after she had the black vomit,) by wrapping her up in sheets wet in warm vinegar, putting her to bed, covered over with blankets.

That you may judge of our climate, I send you extracts from my diary of the weather for two seasons during our hottest months; the cause of its not being continued during the time of the fever, was owing to the confusion we were all in, and my nephew, who attended to the thermometer, was taken with the fever and died; he had just copied the last inclosed before he was taken down. I think well to mention, that during the sickness the weather was dry, and not by any means unpleasantly hot.

The committee of health kept coffins ready made, graves dug, and buried the dead without delay; had all bedding and clothing, used by the sick, burnt: after the fever subsided, had the town cleansed as well as possible; the wells and pumps attended to; the old privies filled up and new ones made. I am persuaded, that with proper attention to cleanliness and our quarantine laws, we shall escape, at all times, the yellow fever. Our climate is nearly salubrious, (I mean St. Mary's,) we are open to the sea, are surrounded with salt water, and have the sea breeze or trade winds, with which we are visited almost every day in summer. As a proof of the health of St. Mary's, I have to mention, that I have lived here for twenty years, and have scarcely been a day sick, though I have undergone great fatigue and exposure. At the present day I do not know of a single person of my acquaintance in town or in the country, for twenty miles around, that is sick or complaining.

I think that by the time you have read thus far of my unconnected scrawl, you will be tired. I shall therefore close it by referring you for further information, to the different enclosures; and by requesting, as a particular favour, that you will indulge me with your opinion of the sickness alluded to, and should you publish a book on fevers, which I understand you intend, you will confer a favour on me, and render a service to the inhabitants of this remote country.

With sentiments of respect, I remain
Your humble servant,
JAS. SEAGROVE.

Dr. Hosack.

IV.

Observations on Mercury: *embracing its Medical History and its abuse as an article of the Materia Medica. By* John W. Francis, M. D. *Fellow of the College of Physicians and Surgeons of New-York, Member of the New-York Historical Society, &c.*

The general properties of mercury, as found in a native state, and its various combinations with other substances, being generally detailed at some length in the several works on chemistry and mineralogy, all that the writer intends, on the present occasion, is, to offer a concise view of its medical history, and to consider the abuse of this powerful remedy as an article of the materia medica.

From the sacred volume may be derived considerable information, relative to the state of chemical knowledge, in the earliest ages of society. Numerous passages there occur in which notice is taken of gold, silver, copper, iron, lead, and tin; and from other parts it may be inferred, that they were not altogether ignorant of several of the more obvious applications of chemistry to the arts.* Of mercury, however, no mention is made; and at what particular period the first knowledge of this metal may be dated, or the time in which it was originally employed in the treatment of diseases, remains uncertain. In the writings of Hippocrates, frequent mention is made of several metallic ores, but the name of mercury does not occur: hence it may be concluded, that in his time it was not considered an article of the materia medica, as the employment of so active a remedy could scarely have escaped the notice of so intelligent and profound an observer. Aristotle, however, who flourished about forty years after Hippocrates, and Theophrastus, his most distinguished pupil, were acquainted with it. The former, treating of the peculiar character of bodies, in Lib. IV. Meteorologicorum, notices mercury;† and the latter, in his History of Stones, states that it has its uses, and details a process for obtaining it pure from native cinnabar.‡ Theophrastus also states, that Callias, an Athenian, invented a process for making factitious cinnabar, about three hundred and fifty years before Christ.‖ This appears to have been the first artificial preparation of this metal. Dioscorides, whose fondness for the products of the vegetable kingdom led him to hold in little estimation those of the mineral, ascribes pernicious effects to it in medicine;[*] and the elder Pliny, under the appellation of the vomica liquoris æterni, declares that it has the quality of poisoning all things.[†] These opinions of the nature of mercury, entertained by Dioscorides and Pliny, no doubt influenced Galen to consider it highly corrosive, and rank it among the class of poisons, for it does not appear that he ever made trial of it himself.[‡]

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* See also Lucretius de Rerum natura, vol. 2. lib. v. with Good's Notes.

† *Απηκτα δε, οσα μὴ ἔχει ὑγροτητα ὑδατώδη μηδ᾽ ὕδατος εστιν, αλλα πλεῖον θερμου και γῆς, οιον μέλη και γλευκος· ὥσπερ ζέοντα γαρ εστι και ὅσα ὕδατος μεν ἔχει, ἔστι δε πλεῖον αέρος, ὥσπερ τὸ ἔλαιον, και ἄργυρος χυτὸς, και εἴ τι γλίσχρον, οιον ἰξὸς και πισσα.* Aristot. Oper. vol. 1. p. 816. ed. 1597.

‡ Theophrastus, de Lapid. p. 232. Trans. by Hill.

‖ Ibid. p. 235.

Notwithstanding the authors already mentioned had thus decidedly spoken of the destructive effects of mercury, and that their writings were already extensively circulated among the Arabians, who embraced with great zeal the then prevailing Galenical doctrines, yet some of the most distinguished physicians of the Arabian school were among the foremost of those who dared to call in question their correctness in this respect. Believing this metal to be not merely harmless, but calculated to do much good in the treatment of diseases, they recommended its use externally;[§] and in the form of ointment, united with various ingredients, it was employed in cutaneous affections, as herpes, impetigo, psora, &c. Shortly after this period, Rhazes and Avicenna having observed that even when inwardly taken it caused no injurious effects, and that by its weight it made a free passage through the body,[||] the practice now became, to give it in the quantity of pounds in affections of the intestinal canal and in cases of difficult labour; little attention being bestowed to find out the particular cause of this disease. Joannes de Vigo is, by some writers,* supposed to have been the first who has mentioned any pharmaceutical preparation of this metal for internal exhibition. It was called a red precipitate, and such he has represented its efficacy to have been in disorders of the intestinal canal, that he distinguished it by the name, "mirabilis et egregia medicina."† But this pompous appellation was not sufficient to bring his nostrum into general use. It was universally condemned by the physicians of his time, and soon gave place to the famous pills of Barbarossa, which were a combination made up chiefly of quicksilver, rhubarb, aloes, and musk.‡

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[*] Vim pernicialem habet, suo enim pondere interna perrodit. Dioscorides, lib. v. as quoted in Alston's Mat. Medica, vol. 1.

[†] Est et lapis in his venis, cujus vomica liquoris æterni, argentum vivum appellatur, *venenum rerum omnium*. *Plinii*, lib. xxxiii. cap. vi. p. 702.

[‡] *Hydragyros, argentum vivum.* Non est sponte nascentibus medicamentis, sed ex iis quæ parantur; veluti psimmythium, ærugo, psoricum, lithargyros. Cæterum interimatne, deuorarum aut admotum extrinsecus *nondum feci periculum*. *Galeni, de Simp. Med. Facul.* lib. ix. p. 553. See also the *Pharmacologia Anti-Empirica of Harris*, p. 94.

[§] Primi omnium medici Arabes ausi sint mercurium exterius adhibere. *Astruc. de Morb. Ven.* 4to. vol. 1. p. 156.

[||] Argentum vivum plurimi qui bibunt, non læduntur eo; egreditur enim cum dispositione sua per inferiorem regionem. *Avicen.* tom ii. lib. iv. p. 200, ed. 1595.

Matthiolus and Brassavolus gave this metal to children affected with worms, in doses from two to twenty grains, and always, it is stated, with some success. In cases of difficult parturition, it was administered with the same result. Similar facts are still farther supported by Fallopius and Fernelius, the latter of whom has witnessed pounds of crude mercury given to induce abortion.§ Equally large doses were administered in the iliac passion.

The external use of mercury, in the mean time, was not neglected, either by the Arabians, or by others who became reconciled to the opinion of its salutary tendency. On the authority of Dr. Freind,‖ it is declared, that friar Theoderic induced by his unguents so profuse a salivation, that the "humours flowed like a river," which was considered a certain evidence of its successful employment; and this appears to have been not unfrequently the practice of that time. Thus it appears evident, that at that early period, there were three distinct and powerful sects who entertained different ideas with regard to the medical virtues of this metal: those who were decidedly opposed to the introduction of mercury as an article of the materia medica; others, again, who, though they admitted its salutary operation in disease, yet confined its use solely in external applications; and a third class, who were the strenuous advocates for its liberal use internally.

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* Luisinus, Barry, and others.

† Med. Trans. of the College of Physicians of London, vol. i. p. 147.

‡ Luisini Aphrodisiacus, p. 946.

§ Vidi mulieres qui libras ejus biberunt ut abortum facerent, et sine noxa. Ego exhibeo in vermibus puerorum et nullum parit symptomata, solum necantur vermes. *Fernelius. Alston's Mat. Med.* vol. 1.

‖ History of Physic, vol. 2. p. 361. Alston's Mat. Med. vol. 2. p. 361.

About the time that the Arabian physicians first noticed the effects of mercury as an article of medicine, what may be called the golden age of alchemy had already commenced, and of the many subjects of examination to which the philosophers of that sect directed their attention, and of which they conceived the greatest hopes, the most conspicuous was mercury. Geber appears to have been among the foremost of those who imbibed this notion, which was subsequently adopted and maintained by the celebrated Roger Bacon in the thirteenth century. Believing it to be the basis and matter of all metals,* that by subtilizing, purifying, and digesting it, it might be converted into pure gold, they subjected it to every practicable process, in the visionary researches after the philosopher's stone.† The successful employment of this metal by the chemists and Arabian physicians, and its introduction in the treatment of lues venerea, in 1497,* afforded still farther inducements to them to extend their investigations; and by the bold and vigorous use of it, in conjunction with opium, Paracelsus and Van Helmont, in the sixteenth century, made known a practice far more successful than that of their predecessors, and effected cures altogether beyond the power of the Galenical schools.

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* Sperma metallorum, says Harris. *Parm. Anti-Empir.* p. 93.

† Si medicamentis relictis progredior ad alchymiam: in hujus asseclarum tantum, non omnium ore crepat quotidie mercurius, dum alii in illo veram lapidis philosophici materiam hærere credunt alii, ad minimum in metallorum arte transmutatoria felicem eventum sibi promittunt: imo, quod non negandum, e plurimis talia tentantibus uni alterique aliquando licet esse tam felici, ut quod optat obtineat, quod Theoph. Paracelsi, et aliorum exempla evincunt. *Acta Erudit.* Dec. II.

Passing over the contentions relative to mercury which existed among the chemists and Galenists, it may be sufficient to observe, that with the prevalence of that class of diseases vaguely denominated leprous, and the extension of the lues venerea, the use of this remedy became gradually more extensive, and was considered among the most valuable as well as active articles of the materia medica. The variety of opinion relative to it, which agitated the writers of the seventeenth and eighteenth centuries, have a more immediate connection with the advantages of certain preparations, and the theory of their operation. Of these authors, the most conspicuous were Hoffman, Sydenham, Boerhaave, and Van Swieten; beside several other writers of lesser note.† It ought not to be left unnoticed in the history of this medicine, that the facetious Dr. Dover, believing it to be a valuable remedy in affections of the stomach and in other diseases, warmly recommended its use in a crude state. To take an ounce of quicksilver every morning he declared to be the most beneficial thing in the world; and in 1731 and 32, it

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anno viii. p. 339. Omnia autum metella sunt ab argento vivo creata: et cum illo omnia resolvuntur, et in sulphur convertuntur. *Joan. Benedic. Luisinus de Morb. Gal.* c. iv. p. 175.

* Sprengel. Cabanis' Sketch of Medical Science, p. 416.

† See the Acta Eruditor. also Acta Curiosor. and the Ephemer. Natur. Curiosorum.

became "fashionable" in London and in Edinburgh to take that quantity every morning for several weeks.*

The medical history of mercury closes with its extensive use in the diseases of warm climates; more particularly in the malignant fevers of the tropics, as introduced by Dr. Chisholm,† and the practice subsequently adopted by the North American physicians.‡

Having given some account of the medical history of mercury, before proceeding to notice its general and indiscriminate use as an article of the materia medica, and the consequent morbid effects of which it is productive, some few observations may be introduced relative to its action upon those individuals who employ it in the various mechanical arts, or who are themselves engaged in the working of mercurial mines.

Among the earliest authors who have bestowed particular attention on this subject, were George Agricola, who noticed the destructive effects of mercury on the human constitution in his elaborate work on metallurgy, and Johannes Francis Fernelius, a contemporary writer, in his treatise on lues venerea, whose respective productions appeared in the early part of the sixteenth century. The former author dwells particularly on the manner of obviating the pernicious consequences which may occur to the body from mercurial exhalations.§ The latter, among other facts of a similar nature, makes known the case of a goldsmith, who, upon imprudently exposing himself to the vapour of quicksilver, " became stupid, lethargic, and quite dumb."[*] Like to this is the declaration of Boyle, who observes that death has been occasioned from the same cause.[†] Besides these authors may be mentioned the Jesuit Acosta,[‡] Fabricius Hildanus,[§] and Bernadin Ramazzani.[||] Among the consequences attendant on those who work in mercury, or are exposed to its fumes, Hoffman states palsies, apoplexies, epilepsies, hectic fever, &c.[**] Paulus Zaccheus, in his legal medicine, enters at length into the consideration of the effects of mercury in its native state; and not only declares his own opinion of their pernicious nature, but adduces arguments in confirmation, from some of the early Arabian writers, and enumerates the diseases caused by the fumes of this metal; he adds, *the same Avicenna declares.*[††] "M. Jussiau," says Dr. Alley, "in a paper on the working of the quicksilver mines of Almaden, in Spain, published in 1719, mentions the appearance of pustules over the whole body as a consequence of a contact with the mineral, even in its metallic state, together with tumours of the parotids, aphthæ, and salivations."[‡‡]

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* Edin. Med. Essays and Observ. vol. 3. p. 347. Cullen's Mat. Medica, vol. 2, p. 250.

† Essay on the Malignant Pestilential Fever.

‡ Rush's Works. Mitchill and Miller's Medical Repository. Miller's Retrospect of the Eighteenth Century.

De Re Metallica, lib. ix. p. 344. ed. 1621.

To the authors already mentioned might be added many others of more modern date, whose declarations coincide with what has been just advanced; but a general reference to their works must suffice. See the respective publications of Dr. Mead,[*] M. Sauvages,[†] Dr. Brown,[‡] Keysler,[§] and the Abbe Raynal.[||]

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[*] Fernelius de Lue Vener. p. 590. Alston's Mat. Med. vol. 1. p. 80.

[†] Works, vol. 3. p. 330. fol. ed. 1744.

[‡] Discourse of Quicksiluer, of the Mynes and Worke, and what is requisite for that subject. Purchase his Pilgrimes, vol. 3, p. 947-8.

[§] Observat. et Curat. Chirurg. cent. v.

[||] De Morbis Artific. p. 491.

[**] Dissert. Metallurg. morbif. Rational. Systemat. vol. 2. ed. 1729.

[††] Utidem Avicenna testatur. *Quest. Medico-legal.* lib. xi. p. 212. ed. 1688. Ejus vapor facit decidere paralysim. *Avicen.* vol. 1. lib. ii. p. 267.

[‡‡] Observat. on Hydrargyria, p. iv.

The writer cannot, however, forbear to introduce on this subject, the remarks of Professor Gmelin, of Goettingen, as contained in his Apparatus Medicaminum, a recent performance of the German press. They are the result of extensive examination, and possess additional claims to attention from the authorities he has adduced in support of their correctness. "Neque dubius est mercurii in nervos effectus, funestus omnino, ut ea certe forma veneni nomine dignissimus sit, si halitus specie per nares et os corpus ingrediatur, ita ut non tremores modo artuum experiantur, v. gr. metallici, qui in fodinis, in quibus mercurius virgineus occurrit, operantur: chirurgi qui in mercurio per frictionem adplicando desudant, et ii qui, e. g. in officinis venetis mercurii cum stanno mistura vitri superficiem illinunt, sed alii quoque artifices, qui sergentibus ex igne mercurii vaporibus sese exponunt, potissimum aurifabri, qui in deaurandis ignis auxilio aliis metallis versantur, tum asthmati, tum paralysi artuum, et apoplexiæ præsertim valde sint obnoxii, neque rara adeo sint exempla hominum, ab inspiratis exitiosis his halitibus mortem repentinam obeuntium."[**]

The preceding opinion relative to the destructive effects resulting from the fumes of mercury, though grounded upon such weighty testimony, has been rejected by a late and eminent writer, the Baron de Humboldt; who attributes the pernicious consequences which ensue from the working of mines of that metal, to the excessive labour the individuals engaged in this employment undergo. "From five to six thousand persons," says he, "are employed in the amalgamation of the minerals, or the preparatory labour. A great number of these individuals pass their lives in walking barefooted over heaps of brayed metal, moistened and mixed with muriate of soda, sulphate of iron, and oxide of mercury, by the contact of the atmosphere and the solar rays. It is a remarkable phenomenon to see *these men enjoy the most perfect health*."* He also declares, that a part of the inhabitants, at Guanaxuato, drink the very water in which the amalgamation has been purified without feeling any injury from it.

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[*] Medical Works, vol. 1. p. 106.

[†] Nosolog. Method. vol. 1. p. 558. ed. 1768.

[‡] Travels, Harris' Collect. ed. 1748. vol. 2. p. 784.

[§] Travels through Germany, &c. vol. 4.

[||] East and West-Indies, vol. 3. p. 144.

[**] Apparat. Medicam. (*regnum minerale complectens.*) vol. 2. p. 22.

There is no doubt that certain circumstances are required to induce the morbid operation of mercury, even in this state, but these circumstances are of the very nature of those observed by the Baron himself. It is requisite that the metal undergo a minute subdivision, in order to exercise a pernicious tendency upon the body, and that the body itself possess a certain predisposition; a principle declared by Hoffman, and ably illustrated by that distinguished medical philosopher.† In corroboration of this remark, may be stated the very recent occurrence which took place on board two vessels, the Triumph and Phipps, in which, from the fumes of quicksilver, an alarming illness broke out among the crews, all of whom were more or less salivated.‡ Reasoning from analogy, a like conclusion may be drawn from the effects of other metallic ores.§ The facts, too, observed by Robert Boyle,‖ which are diametrically opposed to the latter declaration of Humboldt, might be here added, had not this part of the subject already been extended to too great a length. It remains with the reader to decide, whether the evidence advanced affords a sufficient refutation of the observations of the Baron.

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* Political Essay on the Kingdom of New-Spain, vol. 1. p. 127. Lond. 1810.

† Rational. Systemat. Dissert. Metal. vol. 2.

‡ Edin. Med. and Surg. Journal, vol. 6. p. 513.

§ See Franklin's Letter to Vaughan, Works, vol. 3. p. 398. Phil. 1808.

‖ Boyle on the strange subtility of Effluvium, Works, fol. ed. vol. 3. p. 317.

The materia medica contains not an article in the employment of which there are more circumstances deserving consideration, than those connected with or attendant upon the use of mercury. This remark with nearly equal force applies to all the various forms in which this powerful remedy is, at the present day, administered; and he who ventures to depend upon the successful operation of this medicine, without a due regard to the age, sex, and particular constitution of the patient; the diagnostic symptoms and stage of the disease; the previous treatment that may have been pursued; climate, and temperature; will not only subject himself to frequent disappointments, and hazard the safety of his patient, but most deservedly become the object of severe crimination. The whole history of mercury, in the numerous and complicated diseases in which it is employed, justifies the correctness of this assertion; and would it not far exceed the limits proper for this place, abundant evidence, derived from unquestionable sources, might be here detailed.

Mercury, when taken into the system in considerable quantity, either through the mouth or by absorption from the surface, acts with peculiar force upon the stomach, inducing indigestion, loss of appetite, nausea, and vomiting; the functions of the chylopoietic viscera become greatly disturbed, especially those of the liver; and from its very powerful effects upon the digestive organs, the whole intestinal canal soon participates in the disorder. It exerts a no less powerful influence upon all the secretory and excretory vessels of the body, as in those of the mouth and fauces, trachea, bronchiæ, and lungs, and not unlike the preparations of antimony, paralyses the action of the minute and distant vessels, especially those of the lymphatics. From this most general operation, a languor of the whole system is produced, the constitution at large becomes affected, and symptoms highly indicative of general derangement and nervous irritability ensue. These effects, however, are much more readily induced in particular individuals or habits of body than in others; and as remarked before, an intimate relation exists between the operation of this medicine, and the age, sex, constitution of the patient, temperature, &c.

A small dose of calomel, given in the infantile state, has been followed by convulsions, and sanguineous discharges from the alimentary canal.* In some instances, the same preparation of mercury, in small doses, has excited a preternatural action of the blood-vessels, and hæmorrhage from the lungs; thus predisposing to consumption, and ending in that disease; and in females of delicate habit, violent menorrhagia. In certain constitutions it has given rise to symptoms characteristic of dysentery, which have been succeeded by a colliquative and fatal diarrhœa. Examples, too, are not wanting, of a most profuse salivation, followed by extreme weakness and great prostration of strength, being attendant upon the exhibition of but a few grains of this medicine. Indeed, Dr. Ferriar relates the case of a maniac, to whom even half a grain of calomel proved a full dose.† Its peculiar effects upon the minute and distant vessels of the absorbent system, depending either upon the excitement induced, or upon the debility consequent thereon, are fully apparent when the kinds of diseases which it occasions are considered; such as the several forms of dropsy, hydrocephalus, hydrothorax, and anasarca, and various affections of the lymphatic and glandular system; and when this principle of its action is considered in its full force, little doubt need be entertained, that of the numerous causes which have been assigned for the preternatural decay of teeth, mercury may be justly reckoned a principal one.*

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* MS. Notes of Hosack's Lectures on the Mat. Med.

† Med. Hist. and Reflect. vol. 3. p. 56. See also Pearson on the effects of various articles in the cure of the Lues Venerea, p. xix.

To these more ordinary ill effects attendant upon the frequent and indiscriminate use of mercury, may be added the numerous disorders which it induces of the nervous system, and of the intellectual functions; as, among the former, tremors, convulsions, epilepsy, palsy, &c. A remarkable instance of this last disease is related by Professor Hosack, as having occurred in a child of this city, who, from the abuse of this remedy, was altogether deprived of the use of its limbs.† Of the derangements of the intellectual system, might be mentioned the various affections of the mind, from a state of vigilance to perfect mania; and not uncommonly an impaired state or total deprivation of one or more of the senses, as loss of sight, loss of memory, loss of voice, and deafness. In the case just noticed, so powerful were the effects of mercury on the memory, that the child, although able to read previous to its employment, was compelled to learn anew the letters of the alphabet. But these facts, though of the greatest value, possess little claim to novelty. Many of them were noticed by practical observers, soon after the introduction of this mineral as an article of medicine; and at the present day, as the importance of the subject has become more manifest, it has deservedly acquired a proportionably greater degree of attention. But without further enlarging, in this general manner, the catalogue of ills which originate from the abuse of mercury, it will probably be attended with more practical advantage to consider the present fashionable employment of this remedy in the treatment of particular diseases; and, for reasons which must appear obvious, these remarks are necessarily confined more especially to the practice pursued by the physicians of our own country. And first, of some of the diseases belonging to the class denominated febrile.

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* See also Fox on Diseases of the Teeth, p. 108.

† MS. Notes of Lectures on the Mat. Med.

To the bold and vigorous practice adopted by the celebrated Dr. Chisholm, in the cure of the malignant pestilential or yellow fever which prevailed at Grenada, and at other of the West-India islands, in 1793, may be attributed the present general employment of mercury in the treatment of all the various forms of intermittent, remittent, and typhus fever in the United States. This remedy, it is well known, was long before that time made use of, and often to a considerable extent, in the treatment of the febrile diseases of hot climates, and also in some diseases of a like nature which prevailed in this country. Dr. Warren, in his treatise, published in 1740, animadverts on the practice of giving calomel in inflammatory fevers.* Dr. Gilchrist, shortly after that period, expresses a high opinion of the superior virtues of mercury in the low state of fever, during the existence of inflammation.† Dr. Wright employed it in the acute diseases of Jamaica, in 1764; and the same remedy was resorted to by Dr. Chisholm himself, in the cure of the yellow remitting fever which prevailed at Grenada in 1786.‡ In our own country, during the existence of the sore-throat distemper, about the year 1740, (a disease in some respects precisely of the nature of the malignant yellow fever, according to Dr. Chisholm,) frequent recourse was had to this medicine, and in no small quantities, by Dr. Ogden, of Long-Island.*

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* Treatise on the Malignant Fever of Barbadoes.

† Edin. Essays and Observ. Physical and Literary, vol. 3. p. 498.

‡ Duncan's Med. Comment. Dec. ii. vol. 1. and 8.

But though the *remedy* introduced in Grenada in 1793, was by no means new in the treatment of other disorders, to which the malignant pestilential fever, in many particulars, bore a strong resemblance, yet to Dr. Chisholm exclusively belongs the credit of being the first who adopted the novel practice of exhibiting mercury to the great extent it is now employed in this disease; a practice to which he was led from the ineffectual result of every other remedy, and from the appearances he perceived in the two first bodies he opened. In some cases, mercury, in the form of calomel, was given to an almost incredible extent; frequently to the amount of four hundred grains; and during the existence of the same epidemic in subsequent years, sometimes no less than eight hundred, and at other times upwards of one thousand grains were employed. But the success of this practice, says Dr. Chisholm, "justified my temerity:" and his future experience and observation produced the fullest conviction of its efficacy. An extraordinary instance of the effects of mercury, in the treatment of the *yellow remitting fever*, may be here noticed: before any very material change took place in the state of the patient, "he had taken," says Dr. C. "sixty-four grains of calomel by the mouth; thirty-four drachms, or two thousand and forty grains, were administered by clyster; and sixteen ounces of the strongest mercurial ointment, or about three thousand six hundred grains of triturated mercury, were carefully rubbed into his arms and thighs; in all, five thousand seven hundred and four grains, in the course of five days. His recovery was astonishingly rapid after the favourable change was effected."* We cannot here enlarge upon the many circumstances, which, in the opinion of Dr. Chisholm, so loudly called for such active treatment. Whether the malignant fever, which he has so happily described, be a disease of a specific form, and in its nature contagious, or whether it be only the ordinary remittent of temperate climates, are questions which have been discussed in all the bitterness of controversy. One cannot but lament that on a subject so deeply affecting the public interest, more deference had not been paid to the opinions of those who from education, talents, and the most ample opportunities of personal experience, were eminently qualified to decide. Science disdains the spirit of party, and philosophy herself weeps at the madness of sectarians.

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* Mitchill and Miller's Med. Rep. vol. 5. p. 98.

Every consideration conspires to induce the fullest belief, that the mercurial practice was adopted by Dr. Chisholm from the most laudable motives; and the Essay which he has offered to the world, while it affords a luminous and faithful exhibition of the ravages committed by a dreadful pestilence, and of the means employed to arrest its progress, presents the most unquestionable evidence of superior intellect, united to a heart equally alive to every ennobling sentiment, and zealous for the best interests of human kind.

This digression on the practice of Dr. Chisholm seemed proper and necessary; as, upon the appearance of the yellow fever, in the same year, in the city of Philadelphia, though depletion by the lancet constituted a chief part of the method of cure, the mercurial plan of treatment was also adopted. During the prevalence of the same epidemic in 1794, in New-Haven, Philadelphia, and Baltimore, the application of this remedy became more general, particularly in the last mentioned city; not, however, without calling forth the animadversions of some, who contended that the principles upon which it was administered were erroneous, and the practice itself pregnant with mischief. But the nature of the present performance forbids farther minuteness. Let it suffice to observe, that upon the re-appearance of the yellow fever in the various parts of the United States, at every subsequent period, many eminent practitioners had immediate recourse to the mercurial method, which was pursued until salivation was excited, a practice upon which they placed their chief reliance; while, on the other hand, no inconsiderable number of medical men, of great professional reputation, adopted it but partially, and with great reluctance, or indeed rejected it altogether.*

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* Essay on the Malignant Pestilential Fever, vol. 1. p. 476.

As to the *success* attendant upon the mercurial practice in the yellow fever of this country, whatever it might have been in comparison with that resulting from any other method of treatment, it is abundantly evident, from the mortality which occurred, that in this respect here, as well as in the malignant fever of the West-Indies, much room was left for improvement.

The utility of the free employment of mercury in the treatment of the yellow fever of the United States, may be well doubted; chiefly for the following reasons:

First. The climate of this country is singularly unfavourable to the salutary operation of this medicine. The frequent and uncertain transitions of the weather from heat to cold, from dryness to humidity, while they are often the cause of sudden and violent diseases, which generally assume the inflammatory character, they give the body a certain morbid predisposition, that renders it unable to withstand the influence of a mercurial course, which on the native of a more southern and temperate atmosphere, would at least prove not injurious, and probably successful. However numerous and contradictory the reasons assigned by pathologists may be, the fact itself cannot be questioned ; though it does not seem to have been duly regarded by those who were desirous of establishing in this country the practice of the West-Indian physicians.

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* See Professor Rush's several histories of the Bilious Yellow Fever in Philadelphia, in Med. Inq. and Obser. vol. 3 and 4. Drysdale's account of the yellow fever of Baltimore in 1794, in Coxe's Medical Museum, vol. 1. Monson on the yellow fever of New-Haven in 1794, in Webster's Collection of Papers on the Bilious Fever. Smith's letters to Dr. Buel on the yellow fever of New-York, in ditto. Bayley on the epidemic fever of New-York in 1795. Hosack on the yellow fever of New-York, in 1798 and 1799, in Currie's Sketch of the Yellow Fever of Philadelphia in 1799. Rand on the epidemic of Boston in 1798, in the Med. Repos. vol. 2. Caldwell on the yellow fever of Philadelphia, in 1803 and 1805. Currie's respective publications on the synochus icteroides. Wheaton on the yellow fever of Providence, R. I. in Med. Repos. vol. 10. and other papers by different American writers, in the same Journal.

Secondly. The morbid appearances, as they are exhibited upon the dissection of individuals who have died of the yellow fever in different parts of the United States, during its prevalence in different years, furnish another argument against the extensive employment of mercury in this disease. As it is universally admitted that this remedy is a powerful deobstruent, and indicated in all cases of local congestion, particularly of the glandular system ; from a supposition that this part of the body was especially affected, implicit recourse was had to mercury. But while the liver appears to be the most diseased organ in those who die of yellow fever in the West-Indies, as Dr. Chisholm and others have declared,* this important viscus seems to be in a remarkable degree exempt from derangement, in those who have died of the same disease in this country. Such was found to be the case, in the fever of Philadelphia in 1793, by Doctors Physic and Cathrall ;† in those who died of the yellow fever in

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* Essay on the Malig. Pest. Fever, vol. 1. p. 351.

† Rush's Med. Inq. and Observ. vol. 3. p. 174. Cathrall's Sketch of the Synochus Maligna, p. 70.

New-Haven in 1794, as remarked by Dr. Monson;* in the fever of the same year in Philadelphia, and in that of 1798, according to Dr. Rush;† and again, from the dissections made in the same city in the epidemic of 1805, as made known by Dr. Caldwell;‡ and by Dr. Lowber, in the Pennsylvania hospital.§ Exceptions, however, occurred in the yellow fever of Boston in 1798.||

As dissections thus show that congestion or infarction of the liver is of rare occurrence in the yellow fever of this country, mercury, therefore, is seldom serviceable on account of its specific action on the hepatic system; and the impropriety of inducing salivation as a general remedy to remove glandular obstructions, which rarely take place, upon the principle that they constitute the proximate cause of the disease, is too striking to be overlooked. But there are other circumstances which more directly contra-indicate the indiscriminate use of this remedy in yellow fever. The very nature and seat of the disease, as they are characterized by symptoms which uniformly accompany it, and by numerous dissections, establish the fact, that the brain and nervous system are primarily affected; that great disorganization constantly occurs in the digestive organs, the stomach and duodenum commonly exhibiting marks of high inflammation, and approaching sphacelus, and at other times appearances similar to those which ensue from the action of the most narcotic poisons;** and that not unfrequently the same morbid effects extend throughout the whole intestinal canal. Besides this,

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* Webster's Collection on Bilious Fevers, p. 189.

† Med. Inq. and Observ. vol. 3. p. 371. vol. 4. p.77.

‡ Essay on the Pestilential or Yellow Fever of Philadelphia in 1805, p. 100.

§ Phil. Med. Museum, vol. 5. p. 16.

|| Rand and Warren's Account, Med. Rep. vol. 2. p. 240.

** See also Miller's Observations on that form of Pestilence called Yellow Fever. Med. Rep. vol. 2. p. 379.

let the reciprocal action of the brain and of the digestive organs on each other be considered, and the intimate connection which exists between local disease and the disorders of the whole system, as the phenomena resulting from them are particularly evident in yellow fever, and the position before advanced receives strong additional support.

It is scarcely necessary to remark, that mercury seldom fails to weaken the constitution, and always to impair the digestive functions of those even who in these respects are in a sound state. How then is it practicable, by the use of calomel, to diminish those acute pains in the gastric region, or to allay that extreme irritability of the stomach, which are the concomitants of yellow fever? The suggestions of reason are confirmed by experience. These symptoms, instead of being removed, are greatly aggravated, and while the acute gastric affection becomes still more violent, an excessive vomiting is induced, which in many cases terminates but with the life of the patient. The observations of the venerable Dr. S. Bard and of Dr. Hosack, of New-York, of Dr. Currie, of Philadelphia, of Dr. Chatard, of Baltimore, and of Dr. Wheaton, of Providence, during the prevalence of this disease in those respective places, are directly in support of this fact.

But it is declared that the success of the mercurial practice depends upon salivation, and the recovery of the patient has been pronounced to be certain whenever this effect of mercury was perceived to take place. As, however, inflammatory symptoms in numerous instances constitute the first stage of yellow fever, when the peculiar operation of mercury during their predominance is considered, and the impracticability of exciting salivation, it must be acknowledged that this remedy is but ill calculated to mitigate the violence, or to arrest the progress of the disease. Equally apparent is it, that in the more advanced stage of the complaint, when the more formidable and alarming symptoms have already taken place, a reliance upon mercury will be attended with disappointment. The great prostration of strength under which the patient now labours forbids recourse to a medicine the action of which is so powerfully debilitating; the rapid termination of the disease sets at defiance the slow and uncertain accomplishment of salivation.

There is yet another argument which remains to be considered, which cannot but still more strongly confirm the doubts concerning the propriety of depending upon the action of the salivary glands as a remedy for yellow fever. Salivation, even in those cases in which it is produced, does not invariably secure the safety of the patient. It were an easy matter to adduce a number of instances in support of this fact, some of which fell under the observation of Dr. Hosack, in which, though salivation had been brought on by mercury, it did not prevent the fatal termination of the disease, nor was its beneficial effects manifested by any alleviation of the symptoms.

Having thus examined, with as much brevity as the importance of the subject admits, the claims which mercury is said to possess in the treatment of the yellow fever of the United States, and attempted to show from a rigorous examination, that they are not only altogether unfounded, but that the remedy itself, employed in the manner recommended, is highly inimical to the constitution, perhaps it is incumbent on the writer to state a preferable practice. This, however, formed no part of the plan he originally proposed, neither does he consider himself competent to so responsible an undertaking. Yet if it be allowable for him to offer his ideas on this subject, he does not hesitate to declare, from the limited opportunities of observation which he has had, and from the experience of many distinguished practitioners, that what may be denominated the *sudorific* plan, appears to be by far the most successful. After the necessary evacuations from the stomach and bowels by mild purgatives, and in some instances from the blood vessels, by the moderate use of the lancet, the administration of those remedies which relax the surface of the body, and promote the cuticular discharges, are particularly indicated; these kept up for some time, are found to be the most efficient means in the cure of yellow fever.*

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* The following observations contained in a letter from Dr. Hosack to Dr. Currie, dated March, 1800, and published in Dr. Currie's Sketch of the Yellow Fever, as it prevailed in Philadelphia in 1799, strikingly evince the pernicious tendency of the mercurial treatment in this disease.

"Having been actively employed in the yellow fever of 1798 and 1799, I had an opportunity of pursuing this mode of treatment, (the sudorific,) upon an extensive scale, and am prepared to bear the most unequivocal testimony in its favour. In the year 1798, Dr. Samuel Bard and myself visited and attended about five hundred and fifty patients with this disease: of this number we lost between sixty and seventy. In 1799, I attended ninety-eight persons, and lost twelve. Although the fatality of 1799 is nearly in the same proportion with that of 1798, there is a very material difference as it regards the practice we pursued and the condition of the patients in those different years. In 1798 we lost many persons of great respectability, and who were so situated as to obtain every comfort which sickness requires. In 1799, except those I visited in consultation with other physicians, which cases are not included in the list of my patients, I did not lose more than four where they had the advantages of good nursing, comfortable lodging, and pure air. In 1798, upon receiving the Narrative of Bryce on Yellow Fever, in addition to the testimonies of Dr. Rush, Dr. Chisholm and others, in favour of mercury, both Dr. Bard and myself resolved to employ it with the expectation that it would prove a valuable auxiliary to the practice we then pursued. We accordingly employed it agreeably to the plan recommended by those gentlemen. We gave it in the first instance with a view to its purgative effects, in doses of ten grains: afterwards continued it as an alterative, in doses of two grains, and in many instances in conjunction with opium, to secure, if possible, its operation upon the salivary glands. In this manner we administered it to our patients for the space of a fortnight; but that fortnight was a fatal period in our practice. During that short space of time nearly forty of our patients fell victims to this mode of treatment. In every case wherein it proved fatal, it appeared to produce its effects by the irritation it excited in the stomach. For I rarely introduced mercury in the yellow fever where it did not excite vomiting, or at least such a degree of nausea as prevented the stomach from receiving a sufficient quantity of drink to operate upon the secretions; but in many instances vomiting was induced by the first dose

The *abuse* of mercury, as before remarked, is not confined to the treatment of the yellow fever. Very general recourse is now had to the same remedy for the cure of all the various forms of *intermittent* and *remittent fever* which prevail in different parts of our country, and for every variety or type of fever, from the *purest inflammatory* to the *lowest grade of typhus*. Upon whatever principles of pathology the practice is attempted to be maintained, and however specious the reasoning which is offered in support of such empiricism, the fact itself is indubitable, and too singular to pass over without animadversion. There is a fashion in medicine as well as in other professions, and the most vigorous and cultivated mind not unfrequently becomes enamoured of its own speculations: on the depraved and the illiterate the influence of absurd hypothesis and vulgar immitation will be readily admitted. It would appear from the present fashionable and indiscriminate use of mercury, that the operation of the several functions of the body, and the derangements of particular organs, were altogether disregarded, (though the phenomena of morbid action in many cases originate from local affections ;) and that upon the conjectural idea of *general disease*, one remedy, modified accordingly to the peculiar notion of each individual, was alone indicated.

But there are other reasons assigned in justification of the mercurial practice in these diseases. The primary cause of intermitting and remitting fevers, it is said, depends upon some derangement in the secretory vessels of the liver ; these, it is contended, must be unlocked in order to effect a cure,

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which was exhibited, and did not cease until the death of the patient. Salivation was very rarely produced by the use of this medicine.

"Having been thus unfortunate in the use of mercury, we immediately returned to our former mode of practice, which again proved as *successful* as the mercurial treatment had been fatal." *Currie's Sketch*, p. 103, 104, 105.

and mercury is the key to the hepatic system. Hence it is necessary to saturate the body with mercury. As to the febrile diseases, characterized by another train of symptoms, in which all the marks of pure synochal fever are present, on the principle that they arise from a general fulness and preternatural action of the vessels, it is declared that it is essential for the cure to diminish the former and allay the latter, and mercury is now employed to attain both these objects. With regard to typhus, as it is distinguished by a disturbed state of the sensorial functions, and great prostration of strength, these symptoms are to be removed by restoring the general excitement, and giving proper tone to the system. Mercury is now said to possess, in an eminent degree, the property of restoring and equalizing the excitement of the whole system; its tonic power, it is asserted, is its "primary operation," and in its primary operation it "communicates general vigour."* Thus it is that a single remedy possesses a "universal fitness," and is admirably calculated for all the various kinds of febrile disorders! The pernicious consequences resulting from such practice are next to proverbial.

In a future number of this work, the writer designs a continuation of the present subject.

JOHN W. FRANCIS.

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* Murray's System of Mat. Med. vol. 1. p. 213.

V.

OBSERVATIONS *on the* PERIPNEUMONIA TYPHODES, *now prevailing in several districts of the United States. In a letter to* T. ROMEYN BECK, M. D. &c. *Albany, from* DAVID HOSACK, M. D. &c.

New-York, Feb. 3, 1803.

Dear Sir,

As far as you have been enabled to procure information from *books*, you are probably well acquainted with the nature of the fatal epidemic which at present prevails in the city of Albany; but as you have been only a short time in practice, this is probably the first opportunity you have had of becoming practically conversant with this disease. I therefore take the liberty of communicating to you such remarks as the cases I have occasionally seen in this city and in the county of Westchester have suggested.

The disease at present prevailing, you know, is not a new disease, as it has been hastily represented by some physicians: on the contrary, it has been well described by Sauvages, Huxham, and others: by the former under the very appropriate appellation of "*Peripneumonia typhodes*."* Nor is this a new disease in the United States: in the first volume of the Medical and Philosophical Register you will see a very valuable paper upon this subject by the late Dr. John Bard, in which he describes a similar epidemic which prevailed on Long-Island in the winter of 1749, and which was then known by the name of the "*Malignant Pleurisy.*"

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* See his Nosologia Methodica, vol. 1. For other synonyms, see also Cullen's Nosology, under the head of "Peripneumoniæ idiopathicæ complicatæ febre," vol. 2, p. 101.

In the second volume of the Medical Repository (first series) the same disease is noticed by Dr. Hugh Williamson, as it prevailed in North Carolina, in the year 1792. In the southern states it is commonly called, "*Pleurisy in the Head,*" in consequence of the violent pain in the head, which frequently attends the disease in that climate.

Malignant pleurisy, or rather *Typhus Peripneumony*, well expresses the mixed character of this disease; for at the same time that it is attended with inflammation of the lungs, and in some instances, with inflammation of the brain, the general affection of the whole system is certainly that of *typhus fever*.

That inflammation of the lungs frequently constitutes a part of the disease, is manifest, not only from the presence of those symptoms usually attendant upon pneumonic inflammation, viz. cough, pain in the chest, especially upon taking a full inspiration, expectoration tinged with blood in the early stage of the complaint; but it is also evident from the phenomena presented upon an examination of the body after death: the overloaded state of the vessels of the lungs, the large effusion of serum and sometimes purulent matter, the adhesions found between the membranes covering the lungs, and those lining the chest, all clearly show that the patient has been destroyed by such inflammation.* In like manner, in some cases the whole force of the disease is vented upon the brain, producing similar phenomena in that organ. On the other hand the usual symptoms of a putrescent state of body, the petechiæ, blotches, hemorrhagies in the latter stage of the disease, the offensive state of the excretions in general, and great prostration of the powers of life, which rapidly ensues, no less declare the enfeebled and vitiated state of the whole habit. You have therefore two opposite conditions of body to contend with: *local inflammation* on the one hand, a *typhus state of the whole system* on the other.

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* See Report of the Mass. Med. Society, and Dr. Hudson's letter on the prevailing epidemic.

The causes of the disease are no less compounded than the disease itself. The local inflammatory affections are probably occasioned by the *sensible* changes of the atmosphere, while the typhoid character of the disease is derived from an *epidemic constitution of the air*, the same which has given rise to the *typhus petechialis, or spotted fever*, which has prevailed for some time past in our northern and eastern states, and which is doubtless the same disease as that now prevailing in Albany, with the exception, that the present epidemic is complicated with the symptoms of local inflammation of the chest, brain, throat, &c. the effect of the present cold season of the year. With this view of the *mixed* nature of the disease, and of the combined causes which have produced it, we are prepared to expect the various and opposite opinions and modes of practice which have been adopted by different physicians. We accordingly find some prescribing the strict antiphlogistic treatment by large and repeated blood-letting, active cathartics, and other depleting remedies, treating the disease as purely inflammatory.

On the other hand, we find another class of practitioners pursuing the opposite course of exciting the system by the most powerful and diffusible stimuli, to counteract the putrescent state of body; alleging, that it is exclusively a putrid disease, and only to be controuled by antiseptics and the avoidance of all those means which are calculated to debilitate the system. As far as I have seen the disease, they are both wrong: the indiscriminate use of the lancet recommended by some, is, in my opinion, an additional source of the mortality of the disease. On the other hand, the practice of administering brandy and other ardent spirits in the quantity they have been lately prescribed, is truly adding fire to the flame that is already consuming the patient, and cannot be justified either by principle or practice. But the prudent physician will avoid both Scylla and Charybdis. In the young and athletic, he will prevent the brain from being inundated with blood, by the early and judicious use of the lancet, blisters, and other means usually prescribed for diminishing inflammation; keeping in view the age, strength, constitution of his patient, and the general symptoms indicating a putrescent state of the system. On the contrary, in feeble old age, in the habit debilitated by disease, or intemperance, in which those inflammatory symptoms are less violent, and the tendency to putrefaction is most predominant, he will depend chiefly on those means usually resorted to for the purpose of promoting the perspiration and other excretions; at the same time, that by suitable antiseptic drinks and nourishment, he will guard against that debility which so rapidly ensues in this condition of the system. He will in such cases, of course, carefully abstain from the use of bloodletting and other depleting remedies. But he will certainly not effect the first purpose by the excessive use of brandy and ardent spirits. So far from promoting the excretions of the system, they actually restrain those very evacuations which it should be our object to promote, and by which alone we are enabled to counteract the typhoid state of body in this or any other febrile disease.

As a substitute, therefore, for this *brandy* system in those cases where this typhoid tendency prevails, and you are forbidden the use of the lancet and other depleting remedies, or where the symptoms of local inflammation are so mild that they are not indicated, let me recommend to you, after emptying the bowels by an enema or *mild* purgative, to make free use of the *warm bath*, *fomentations* of vinegar and water to the extremities, the liberal use of the infusion of *snake root*, the *eupatorium*, and wine whey in very debilitated habits, or where the powers of life are much reduced, in order thereby to procure a plentiful perspiration. By this evacution we not only counteract the general vititated state of the fluids, but we at the same time diminish, and in some cases, totally remove the local irritation which affects the lungs or other organs, involved in the disease.

For the benefits which have been derived from the sudorific treatment, and the means of effecting it, in the petechial or spotted fever, which treatment promises to be no less beneficial in the present form of the epidemic now prevailing in your city, let me earnestly recommend to you the perusal of the very luminous report of the Massachusetts Medical Society, published in the second volume of their Medical papers, for the year 1810, and of which you will find a copious analysis in the first volume of the American Medical and Philosophical Register.

I am, Dear Sir, yours, &c.

DR. BECK. DAVID HOSACK.

⁂ As you, probably, do not possess the original work of Sauvages, I here subjoin an extract from his description of peripneumonia typhodes, in which you will recognise the essential symptoms of the prevailing epidemic. His mode of treatment also, which I have added, seems still stronger to point out the resemblance between the two diseases.

" *Peripneumonia typhodes*, Deplaigne Journ. de Med. Septembre 1757; *Epidemia annua apud milites à Valenciennes; Pleuro-*péripneumonia *bilieuse et putride.*

" *Character.* Oppressio pectoris, dolor pungitivus, aut gravativus, asthenia magna pulsus parvus, debilis, depressus, sæpè concentratus, ut plurimum vix frequens (sine febre, ut ait Auctor,) dyspnœa, respiratio intercisa, tussis violenta, sicca, sputa per vim extracta, viscida, tenacia, subflava, succedunt nauseæ, vomitio biliosa, lingua crassa, saburrâ albescente onusta, cephalalgia levis, quâ crescente æger delirat obscurè, pari passu ac pectoris infarctus augetur. In cadaveribus omnibus suppuratio pulmonis, alteruter hujus lobus infarctus, vel ambo suppurati; thorax sæpe vel pure, vel sero gelatinoso plenus, similia ramenta gelatinosa in abdomine viscera obducunt: quandoque idem pus vel serum in pericardio: adhærentia plevræ dolenti lateri; non rarò polyposæ concretiones in corde, quas respiratio impedita et crebra designabat; cætera sana, nisi hepar solito majus et decolor.

"*Cura.* Post unam vel alteram phlebotomiam, emeticum præscribito, imò si pulsus parvus, minimèque frequens, ab emetica et cardiacâ potione inchoandum: deinde vel phlebotomia, vel catharsis ex minorativis et tartari stibiati granis paucis. Statim à primis evacuationibus emplastrum vesicatorium lateri dolenti applicetur; intra horas quindecim omnia symptomata mitescunt; febris minuitur, expectoratio restituitur, diaphoresis accedit, nihil in urinis mutatur; antiseptica energetica minimè in hoc morbo pertimescenda; itaque quartâ quâvis horâ sumatur bolus ex radice contrayervæ, camphorâ et nitro, vel alter bechicus et diaphoreticus, prout casus exegerit. Oxymel scilliticum, syrupus de althæâ cum aquâ scabiosæ, imperatoriæ, vel scordii, et pauxillum olei amygdalarum tussim sedant. Felix eventus ex diaphoresi et anacatharsi exspectandus, adeoque prout indicatæ fuerint, in intervallis præscribuntur cathartica minorativa, clysmata, ptisanæ nitratæ vel bechicæ, cardiaca et diaphoretica; et si delirium, vel cephalalgia urgeant, sectio jugularis optimè succedit."

VI.

OBSERVATIONS *on the* MALIGNANT PLEURISY *of the Southern States. In a letter from* HUGH WILLIAMSON, M. D. LL. D. &c. &c., *to* DAVID HOSACK, M. D. *Dated, New-York, March 2d,* 1813.

Sir,

I GAVE you, some years ago, a short account of a disease that prevails in North Carolina, in the winter season. It is a very fatal disease, and in many cases destroys the patient in twenty-four hours. It prevails chiefly in the flat country that extends about sixty miles from the sea coast, and along the borders of large rivers at a greater distance from the sea, and in places that in the summer and autumn are subject to intermitting fevers. That disease in Carolina is much more destructive of men than of women; of grown than of young people. I suspect, that in some parts of the state, one half of the male population, who are grown, sink under it. The disease, to which I refer, in all cases, is named a pleurisy. When it fell upon the breast, as the pain in many cases was severe, the impropriety of the name is not remarkable; but it falls upon the head, nearly as often as it falls upon the breast, and in that region is exceedingly painful. Then too, it is called, however improperly, a pleurisy in the head. The name of the disease was of little consequence, provided it had been properly treated by medical practitioners. But it was, in all cases, as far as I could discover, treated as an inflammatory complaint. My opinion was, that in all cases, or nearly in all cases, it was typhus, for reasons that I shall presently state. A very fatal disease, called the spotted fever, appeared in the year 1806, in a small town in the state of Massachusetts, and upon the following year it appeared in two or three towns in Connecticut. Since that time it has made considerable ravages in both those states. A similar disease, as we are told, has lately appeared in Albany, and in several other parts of the state, near the north river, above the Highlands, and among the troops who are quartered near the lakes. As the complaint that has appeared, in sundry parts of New England, and in this state, is said to resemble the complaint that I have noted in Carolina, in many of its symptoms, and in many instances of its sudden fatality, I have been induced to review my former observations on the fever of Carolina, and to consider whether fevers that resemble one another in so many circumstances, may not have proceeded from the same cause. For if the cause is the same, the treatment in all probability should be nearly the same.

The brumal fever that prevails in North Carolina, whether it be seated in the head or in the breast, is certainly, in my opinion, a fever of the typhus kind. It is the very fever that is called, by Sauvages, peripneumonia typhodes.

The painful observation, that so many of our most useful fellow citizens, in North Carolina, sunk under that disease, naturally excited my attention, and caused me to suspect that there might be something incorrect in its general treatment. The physician, who had the most extensive practice in the town and country in which I resided, was not, as I conceived, a philosophical practitioner, that is to say, he was not in the habit of drawing correct conclusions from facts that must have fallen under his observation. He had come from a climate where pleurisies were treated by copious venesection: the complaint before him was called a pleurisy, and he made a liberal use of the lancet. True it was, that in most cases the patient died, but he presumed, that in all those cases he died of the disease, not of the doctor. I could not allow myself to believe, that frequent venesection could be sustained in a typhus complaint; but all my observations on the subject caused me to believe that the disease referred to was decidedly typhus. That complaint, as I stated above, prevailed in the flat country, or in those places, and only in those places, where intermitting fevers had prevailed during the summer and fall. But I am induced to believe, that every intermitting fever is caused by the absorption of more or less vegetable putrescent matter. In the month of August, in the latitude of 35 degrees, in North Carolina, a man can hardly be exposed to a shower of rain, without being in danger of an intermitting fever. But on board of a ship, in the same month and latitude, at a considerable distance from land, his clothes may be saturated with rain without endangering his health. The reason is obvious. In the former case every drop of rain is charged with some putrescent vegetable substance, part of which is absorbed by the cutaneous vessels. In the latter case, the rain water is pure, it is not injurious. As the air, dews and rain, in warm climates, are usually charged with some putrescent substance, many nations in such climates have been induced to grease or anoint their skins. This process, in most cases, preserves the health by preventing noxious absorptions. While there are copious rains during the warm season, in Carolina, the putrescent substances being diluted by much water, the complaints, in most cases, are simple intermittents. But when a rainy season is followed by warm and dry weather, the putrescent matter being more concentrated and highly excited, the frequent consequence is a simple typhus, or a fever of the typhus kind.

The winter fevers, as stated above, constantly appear in the same tracts in which intermittents prevailed during the summer; and in most cases they attack people who, in the summer or autumn, had been affected by intermittents. The winters in Carolina are sometimes introduced by a dry season, in which case, a rich soil, that in the summer had been saturated by water, is exposed dry to the action of the sun and wind, whence noxious vapours are exhaled. In the course of the summer, the rivers in Carolina are sometimes exceedingly swelled by heavy rains, and vegetable mud is occasionally deposited on some part of the upland. This mud, in the beginning of winter, being exposed to the sun, hardly ever fails to produce the fevers mentioned. Is it possible to doubt whether these fevers are typhus? And yet, strange as it may seem, the cure of these fevers has uniformly been attempted by the lancet. About twenty years ago a fever of this kind became endemic in a detached settlement in the lower part of Hyde county. There was only one practitioner of physic in that settlement, and he bled every patient that he visited. None of them recovered, but he continued to bleed. After thirty or forty of the inhabitants had sunk under his practice, the residue ceased to claim his assistance. The sick were treated by their own teas, yapon and such other remedies, and they recovered. This lesson proved less instructive than it should have been. From facts of this kind, it seemed to be absolutely certain that the North Carolina pleurisy was of the typhus kind, and though I was not engaged in the practice of physic, opportunities presented themselves of testing that opinion. I was twice requested by a particular friend to visit a patient on the very morning in which he fell sick, in consultation with the attending physician. In the first case, as the patient complained of a severe pain in his head, his eyes being inflamed, his bowels were moved by a dose of castor oil. The effect was remarkable in sinking his pulse and in the loss of strength. Blisters were immediately applied, and wine whey plentifully administered. A diaphoresis was soon excited, and he then took a decoction of jesuit's bark and Virginia snake-root. He recovered.

In the second case, the family doctor had been called, and the patient was bled, about an hour before I saw him. This gentleman's complaint was in his breast. He was a strong man, but had been afflicted, in the autumn, by an intermitting fever; I advised his physician to make no farther use of the lancet. Blisters were freely applied once and again. The patient drank plentifully of wine whey and a decoction of Virginia snake-root. A copious perspiration was excited, and after a few days, though the phlegm that he threw up from his lungs was slightly tinged with blood, it appeared from the state of his pulse, that he might safely be treated with a decoction of the bark. It was given accordingly, and the patient recovered. This happened in the same winter in which I had visited the other patient; a winter in which that disease proved very fatal. As that disease, in North Carolina, attacks men much more frequently than women, I attempted, in the History of North Carolina, 2d. vol. to give some explanation of that fact, and to show by what means the disease, in most cases, may be obviated.

If it be true, and I think it will hardly be disputed, that those winter fevers in North Carolina are typhus complaints, and if it be admitted, that they commonly attack people who had lately been afflicted by bilious intermittents, it may be worth while to consider what is the connection between those fevers and the spotted fevers of New England, or the fever that lately prevailed in the northern parts of this state.

A committee of the Massachusetts Medical Society, speaking of the disease, called the spotted fever, observe, that it appeared during the winter, in sundry towns in the county of Worcester, and say, that "Most of the country in which this disease has appeared, is inland and very elevated; it abounds with hills and vallies; has many *ponds*, and many running streams, and fresh water rivers." It appeared also in Cambridge port, near Boston; in which town "it was confined, for the most part, to the land which was recently salt meadow, and which is now intersected by many foul ditches." By this single fact they were justified in looking for a typhus complaint.

The recent fever that has prevailed in the northern parts of this state, now claims our attention. Was it inflammatory or typhus? We deem it certain that the fever was typhus, and that it was the very fever which occurs so often in Carolina. We have seen that the fevers in Carolina are attached to a bilious habit; a certain French writer calls this very fever, a bilious and putrid pleuro-peripneumony; and we know that people in Carolina, who in the autumn have been affected by bilious intermittents, if subjected in the winter to much fatigue, or exposed to sudden changes of weather when thinly clothed, are apt to be seized by that dangerous fever. Is there not something in the history of the northern fever in this state, that bears a strong resemblance to those winter fevers in Carolina? I am not informed that intermitting fevers prevailed more than usual, during the last summer, in the northern parts of this state. But it may be recollected, that for several weeks, in the autumn, we suffered by a deluge of rain. Those rains, if the climate had been warm, must have produced intermitting fevers; they certainly produced bilious habits. In this case the settlers in that part of the state, when the cold weather began, were nearly in the same condition, and equally in danger of a typhoid pleurisy, as the inhabitants of the lower parts of Carolina, in the beginning of winter. Whether the complaints were alike under which they suffered, I am not informed. But I confide that the fever was typhoid, and I hope that it never has been treated, as I am told such fevers, in some cases, have been treated, with copious doses of brandy. For though some constitutions may happily have resisted both the disease and the doctor, the practice is certainly hazardous. I submit to your consideration whether it would not be advisable for the College of Physicians in this city to endeavour to collect from medical gentlemen, in different parts of the state, their observations upon the late endemic fever, and that treatment of the disease which they deem most safe, or that to which it commonly yielded; it being presumed, that in a northern climate, where the muscles are well braced, and where the patient has not been reduced, as in Carolina, by previous intermittents, a more liberal use of the lancet is advisable.

This is not proposed as a subject of mere curiosity. The inquiry may be of great use during the present war. It is not improbable, that in the course of the war the enemy may kill more of our fellow citizens than either of us could wish, but it is to be hoped, that exertions will be made to prevent our troops from perishing, as they do in many armies, in greater numbers, by camp diseases than by the sword. Our troops must be endangered from year to year, in cold and rainy seasons in

Canada, or upon the borders of that province, by fevers similar to that under which some of them, and some other people, have lately suffered. It is greatly to be desired that the best method of treating that disease may be ascertained. You know that a treatise on the diseases of the army, has more than once been published in Europe, at the end of a war. But it is more desirable, as I think, to publish near the beginning of a war, a good account of the best method of treating a dangerous and fatal disease, than to leave it for publication, five or six years hence, when the war may chance to be finished.

Be pleased to accept the perfect assurance of my sincere friendship,

HUGH WILLIAMSON.

DR. HOSACK.

REVIEW.

Art. I. Travels *in the* United States *of* America, *in the years* 1806, 1807, *and* 1809, 1810, *and* 1811, *including an account of a passage between America and Britain; and travels through various parts of Great Britain, Ireland, and Upper Canada, illustrated by eight maps. In two volumes, by* John Melish. Philadelphia. Palmer. Vol. 1st. pp. 442. Vol. 2d. pp. 492.

More travels in the United States! Yes, reader, and if you are delighted with this kind of reading, we sincerely congratulate you; for as matters are circumstanced, you are likely to have enough of it. Mr. Melish tells us, in the outset of his work, that "books of travels are always in demand with the public," and, that "the field is inexhaustible." Nothing can be more correct than the last observation; for as Mr. Melish cultivates the field, a thousand crops may be raised without impairing the soil. According to the plan which he has adopted, a man may write a volume of travels without communicating a single idea: he may write without having any knowledge of botany, mineralogy, or a single branch of civil or natural history. He needs nothing beyond a good memory. The traveller, in this case, is only to suppose that the reader is greatly in love with him, and that he reads the book for no other purpose than to see that his favourite gets safe through his journey. The traveller enters the stage, or mounts his horse in the morning, and I by itself I, is the constant burden of his tale. He tells us what he got for his breakfast in the morning, if breakfast was to be had; what he got for dinner, and how it was cooked, or whether it was cooked in any fashion. At night, for the relief of memory, he writes down the adventures of the day. Then it is, that we learn how often, in the course of the day, he fed his horse; how many bad bridges or broken bridges he crossed. How many deep creeks and miry roads he left behind. Now his horse was up to the knees; again, he was up to his belly in mud. The horse, on a memorable occasion, in deep water, with a rough bottom, was fully overset and he and the rider were both in the most perilous situation. Happily, the rider was not drowned, else we never should have seen these two *instructive* volumes of modern travels.

That the reader may know what fortunate circumstance it was, that gave birth to these travels, we shall give him a short biographical history. Mr. Melish was born in Scotland, and served an apprenticeship in a manufacturing house in Glasgow. Having got some property, *or credit*, he came over in the year 1806, with an assortment of dry goods, to Savannah, in Georgia. There he took an assistant, or partner, with whom he left the goods, and came by water to New-York; thence he sailed to Rhode-Island, and passed on to Boston. From Boston he travelled, in the stage, through New-York, Philadelphia, and Baltimore, to Charleston; whence he passed by water to Savannah. From Savannah he returned, in the year 1807, to Glasgow, by the way of Liverpool. In the year 1808, some mercantile business caused him to visit some towns in England, and in the north of Ireland. Of those several towns he gives us a description, and of the roads by which he travelled, not forgetting his ride in a cold night, upon the top of a mail coach. In the year 1809, he returned to Savannah, where he found that the greater part of his goods had been sold to people who were not much disposed to pay. There he seems to have finished his mercantile operations.

Although Mr. Melish, for three years after his first arrival in Georgia, seems to have made a record, for his private amusement, as we presume, of every step he took, every city, town, or hamlet that he saw; every drenching that he got by a thunder storm; every tavern that he entered, and of all the silly things that were said in his hearing; we believe that he had no intention of causing the press to groan beneath their weight. These adventures, however, now compose the first volume of his travels. But the records that compose the second volume of his work were obviously made with malice prepense. They were made with the purpose of improving our patience by exercise.

Our country has been visited by travellers from different nations, and they who have written their travels, with a very few exceptions, have had the same object in view; to make a few dollars, and to vilify the country. They have written with the same spirit, the same contempt of truth, and nearly with the same proof of talents, from the French duke to the English plowman, who attempted in vain to manage a farm in Virginia. The objects of the little Hibernian, who published his travels, were to gain patronage by the libel, and to prevent the emigration of his countrymen. In the first object he fully succeeded, but unhappily not so well in the second. It is hardly worth while to mention another travel writer, who like the English wandering knight, is a *stranger* in every country of which he writes. Nor is it worth while to criticise the travels of the other creature, who calls himself Ashe, "et id genus omne." The whole fraternity have written with the same malignant disposition. We readily admit that Mr. Melish is not to be included in the above list. We believe that he has no disposition to injure the country, and if the numerous subscribers to his travels are disposed to acquit him on another account, we freely acquit him of any slanderous intention.

It is fully ascertained that a man may write very entertaining and acceptable travels without telling a word of truth. Travels of this description were lately published in Europe: they were from the Cape of Good Hope through the interior of Africa, to Fez, in Morocco. It has since been discovered that the writer never was in Africa. He had respectable talents, and a fertile imagination. It is also clear, that without either of these accomplishments, a traveller may adhere to the truth, without writing a line that deserves to be read. We stated above, in accord with Mr. Melish, that *the field* of travel writing *is inexhaustible.* The writer before us, has given an example that may stand for a proof of this assertion. By the help of a good map, and a gazetteer he has given us an account of three states that he never saw, viz. New-Hampshire, Vermont, and Tennessee; accounts that are quite as good and satisfactory as he has given of the states through which he travelled. It follows, that by the help of a map and gazetteer, he may travel for ever without leaving his chamber. The chief defect in those *sedentary* travels, would be, that they could not well contain that which is the great burden of modern travels, the writer's account of himself. They could not tell us how many rivers he swam in a stage waggon: how often his horse was afrighted by a peal of thunder; how often he met with an old acquaintance; how he slept in a house with broken windows, and other interesting anecdotes of that kind. But this very defect, as we conceive, might be fully compensated by the help of a little invention. His travels might be diversified by curious incidents, and they might be enlivened by diverting anecdotes made or borrowed. Thus it happens to the individual who publishes an almanac; he employs an astronomer to make the calculations of the rising and setting of the sun and moon, their eclipses, and such other phenomena. These serve as a gazetteer and map to the frugal traveller. But every thing that respects the weather, temperate or cold, hail or snow, dry or wet seasons; all those subjects are inserted by the publisher himself, by pure conjecture. And yet we know that this child of conjecture is the most popular part of the almanac.

By this time the reader may be desirous to know some of the veritable incidents that happened to Mr. Melish, during his travels. We shall give him an extract from each volume. The scene is laid in South Carolina; time, October 13.

"Passing over many creeks and swamps of inferior note, and there is hardly any thing else to excite attention in this country, we reached Blackmango creek at 4 o'clock in the afternoon. This creek had swelled to a great extent, and part of the bridge was gone, so that we could not get over the stage nor horses. We got across with the mail, which we delivered at the post-office, where we were informed that the Georgetown mail had not arrived, and so we were set fast at length at a miserable little place called Willton.

"The whole city consisted of only about fifteen or twenty houses; as for public buildings, there were none, but there was a tolerably good wooden building, at which I was told a Scots man kept a dry goods store. Ah, thinks I, to myself, notwithstanding the eminent wretchedness of the place, Saunders has found out that something is to be done here. However, Paddy was not behind with him. The greater part of the other inhabitants were Irish people.

"I took up my lodgings at the head inn, (there were two in the city.) I found my landlord a civil obliging little Irishman. I told him my adventures in the stage from Lumberton, at which he laughed heartily, observing, by —— you must have had a rough time of it, and I'll warrant you have found the ground of your stomach: weel, weel, the old woman will have something ready presently; and I'll see to have a little bit of beef; and though it's salt we'll have plenty of vegetables to it, and some poratoes, the seed of which I got from old Ireland; and in the mean time we'll just have a little drop of something to drink peace and good neighbourhood. Och now I do like to see a countryman, and although you are not just a countryman neither, yet you'r the next door neighbour to it, and that comes to the same thing." So saying, he set off to give the necessary orders about the dinner, and soon returned with the bottle, attended by the doctor of the city, whom he introduced to me as a country man, and as honest a fellow as ever crossed the great sea. While we were regaling ourselves, the doctor was seized with an ague fit. Och now doctor, says the landlord, what's that for? you should leave the like o'that to me who am a train'd hand at it; It's I can rap it away to some purpose when I begin. And he soon did begin to rap it away. He was seized with a violent fit. I felt for them at first. But when I observed their wo-begone countenances and odd gestures, I could not help comparing them, in my imagination, to Shakespear's admirable simile of patience on a monument smiling at grief, and was obliged to burst out into a loud laugh. The landlord, forgetting his ague fit, joined me. "By my shoul, says he, you'r a pure one. I believe now, if you were to be here, beside me, with that merry face of your own, you would do me more good than the doctor with all his medicines. Doctor, why don't you shove that rascally ague about its business, and join me and the gentleman in the laugh." The doctor smiled, which was all the length he could go; however, they soon got clear of their shake, and we sat down together to dinner. "Ay, this is something like civilization," says I, putting my fork into the salt beef. "Now, would you have expected that I could have mustered you up a little bit of stuff like that?" said the landlord. "Now eat away heartily, and make yourself at home; and here's some poratoes for you, and some sweet poratoes, and there's some beans and turnips; take some o'that now, and some corn bread, and some o'these cakes that was baked for you by the old woman, and eat heartily and make your dinner, dear, for you see we don't want good fare though we have got into a queer out o'the world looking place."—p. 268—270.

If we should be asked why this strange dialogue comes to form a part of the travels, we reply, that it helps to increase the size of the book; just as a boy by puffing wind into a bladder causes it to swell.

Vol. 2. p. 261. The scene is laid in the state of Ohio.

" The landlord was from home, and the family were ill provided They had no bread, nor wherewithal to make it; they had no beef and no sugar; but they had some bad tea, bad potatoes and pork, such as I have seen in North Carolina. They made a sort of nondescript dish, by stewing a few slices of potatoes with the pork, and served it up swimming in butter. It put me in mind of Burn's " Olio, that would staw a sow." However, my fellow-traveller, the salt hauler, made a very hearty meal; and I took a little, and but a little of it, albeit I got no dinner, and had a pretty good appetite. Some milk came in from the cows of which I partook freely, and an obliging Rhode Islander, who lodged at the house, favoured me with a little whiskey and water, which I found a real cordial.

" The night was very cold, and the kitchen, which contained the only fire in the house, being ill secured against it, I retired to bed in an adjoining room. As I dreaded the effects of the cold, I threw my own clothes over the bed clothes, and noticing a pane out of one of the windows, I shoved an empty bag into it, and retired to rest.

" October 18th. I awoke early in this morning, shivering with cold, and wished it might soon be day light that I might depart from this uncomfortable place. At last day dawned, and I was not long in perceiving the light, for it poured in upon me in all directions, perpendicularly, diagonally, and laterally. The house was literally like a riddle, and there was an opening almost close by my bed side that would have let in a horse. When I looked round and perceived so many openings I could not but laugh at my precaution of last night, in stopping up the broken window; where, however, I allowed the bag to remain as an admonition to the people to repair the house before winter."—p. 261—2.

Mr. Melish has made an attempt, vol. 2, p. 342, near the falls of Niagara, to instruct his readers, by vindicating a brother traveller from the charge of infidelity in not believing the Mosaic history. He, too, it seems, has his doubts about *oral*, that is to say, written revelation, nor does he admit the *popular opinion*. This reminds us of two men who drank too deep at a tavern, and going home, in a rainy night, one of them fell into the gutter. Help me up, said he. The other tried, but did not succeed. My dear friend, replied he, I cannot lift you, but I will give you the best proof of affection, I will lie down with you.

The reader will excuse us if we detain him a few minutes longer by taking some notice of a conversation which Mr. Melish relates as having passed between himself and Mr. Jefferson, who, anno. 1806, was president.

"On my arrival at the president's house, I delivered my address to a servant, who, in a few minutes returned with an answer, that Mr. Jefferson would be with me presently, and showed me into an elegant apartment. Mr. Jefferson soon entered, by an inner door, and requesting me to be seated, sat down himself, and immediately and very frankly entered into conversation by asking where I had landed, and how long I had been in the country? Having informed him, he remarked, that I would probably be travelling to the northward. I replied, that I had been to the north, and was now travelling to the southward. "And how do you like New-York?" "Very much," said I; "it is one of the finest seaports I have seen, and I presume will always continue to be the first commercial city in the United States." He observed, that he found that idea generally entertained by strangers; that New-York was a very fine situation, and would unquestionably continue always to be a great commercial city; but it appeared to him that Norfolk would probably, in process of time, be the greatest sea port in the United States, New Orleans perhaps excepted. He pointed out the circumstance of the vast confluence of waters that constituted the outlet of the Chesapeak bay, on which Norfolk is situated, and remarked, that these rivers were but partially settled, but they were rapidly settling up, and when the population was full, the quantity of surpluss produce would be immense, and Norfolk would probably become the greatest depot in the United States, except New-Orleans."—Vol. 1. p. 201.

We have transcribed this dialogue, not because Mr. Melish saw any thing particular in it; he simply recorded it, as he recorded his discourse with the little Irish tavern keeper, to increase the size of his book. But we have transcribed it because it exhibits the character of Mr. Jefferson, the Virginia president.

Is it possible that any man, whose mind is not deeply biased by jealousy, should compare New-York with Norfolk, and give the preference to the latter. The situation of Norfolk is not healthy, the water in the city is very bad; worms in the harbour are very troublesome, all the adjacent lands are very poor, and they are cultivated by slaves. That city can never be the depot, except of the produce from James's river and some part of North-Carolina. The situation of Baltimore is, on every account, more desirable. It must carry off the produce of Maryland and a considerable part of Pennsylvania. How is Norfolk to become great? The very idea is romantic; but the thoughts of New-York becoming great is not to be endured, lest Virginia should cease to give presidents and laws to the union. It has long been suspected and feared that New-York would become a dangerous rival to Virginia, and those fears have greatly increased from the time in which some gentlemen in this state, formed the magnificant project of bringing the exportable produce from the great lakes, to the city of New-York, by means of a canal. That project, however, is now in a train to be defeated. Canada is to be taken, and then the lofty projects of New-

York will vanish into smoke. The commerce of Vermont, and half the commerce of our own state will then be thrown into the river St. Lawrence. In that case we must decline instead of growing, and the Virginia planters will have the pleasure of seeing a great commercial project defeated. An event so much desired by men who despise commerce, may give a spring to southern exertions in the conquest of Canada.

ART. II. *The* INTRODUCTORY LECTURE *of* THOMAS COOPER, *Esq. Professor of Chemistry at Carlisle College, Pennsylvania. Published at the request of the Trustees. With notes and references.* Carlisle. A. Loudon. 8vo. pp. 236. 1812.

THIS is no ordinary discourse, nor the production of an ordinary mind. Mr. Cooper has long been known as a learned and able cultivator of natural and experimental philosophy; as the intimate friend and companion of the celebrated Priestley, and afterwards as his distinguished biographer. He now appears before us in the still more important character of professor of chemistry; and the present publication is inaugural to his assumption of the duties attached to his new situation. The subject which he has chosen on this occasion is the history of chemistry as cultivated in the earliest ages of society, among the Jews, Egyptians, Phœnicians, and other ancient nations. The history of the chemical art, as known among the Greeks, Hindoos, and Chinese: the state of the science in what are called the dark ages, and in the more enlightened days of Boyle, Mayow, Hook, and Hales, and from that period down to the present time.

There was a peculiar propriety in selecting such a subject for such an occasion. The theme is replete with matters eminently deserving the attention of the chemist, and of all who are desirous of becoming acquainted with the philosophy of the human mind. For if we examine into the origin and early state of chemical science, if we investigate the causes by which its advancement was facilitated or retarded; if we attend to its history from the time in which it was scholastically disciplined in the days of Pythagoras and Aristotle, and subsequently through the delusive and extravagant, though by no means useless, attempts of the alchemists, down to the period in which it was protected and aided by Bacon and Boyle and Newton, and still later, when its cultivators were Black, Priestley, Scheele, and Lavoisier, we shall scarcely become less familiar with the rise and progress, the fall and decline of science in general than with chemistry. So intimately connected are the various branches of human learning.

That Professor Cooper was qualified for the task he has undertaken, we need no other evidence than the work before us. Within the same number of pages, we have seldom seen manifested, more extensive and laborious research, more acute discernment, and more severity of judgment. The observations and reflections which he makes possess peculiar force and propriety, and are characteristic of a mind, in its conceptions at once vigorous and original. We shall enrich the pages of the Register with several extracts from the present Lecture of Professor Cooper; for however valuable the work may be, there are few of our readers, we believe, who have had an opportunity of perusing it; for such seems to have been the negligence of the booksellers, that although printed in a neighbouring state, we doubt whether another copy, than the one before us, can be found in this city.

On the state of chemical knowledge in the earliest ages of society, so far as it can be ascertained from the sacred writings, the following information is communicated:

"I propose, therefore, to inquire what was known of the chemical art, in the earliest stages of society, as related to us in the Bible; comprehending the detached facts of knowledge among the Jews and the Egyptians. I shall pursue the chemical attainments of the Egyptians and Phœnicians, partly by means of modern remnants of ancient art, and partly from the relations of ancient authors, principally Herodotus, Diodorus Siculus, and Pliny. It will then fall in with my plan, to treat of chemical knowledge among the Greeks and Romans, and briefly to notice the manufactures of China and Hindostan. The chemistry of the middle ages, and the discoveries of modern Europe since the establishment of public societies for the propagation of knowledge, will fill up the sketch.

"I shall begin with the Mosaic relations upon this subject, because, whatever objections may have been made to them, they carry marks of internal evidence that entitle them to great consideration, independent of any theological questions which may be connected with them, and with which in these lectures, I have nothing to do. Moreover, the general character and extent of the Mosaic chronology, (adopting the results afforded by the Septuagint version) bids fairer, in my opinion, to harmonize with the established and probable facts of profane history, and with the progress of civilization in particular, than any other with which we are acquainted.

"We are told then, that Tubal Cain, some generations after the Mosaic period of the expulsion of Adam, was the instructor of all those who worked in *iron* and in *brass*. Whether the original word here translated brass, was really meant to designate that specific mixture of zinc and copper, now so called, I know not. I doubt it, because the evidence appears to me very strong that little was known of that mixed metal, till the discovery of the three kinds of orichalcum at Corinth. Brass, indeed, is repeatedly mentioned in the Old Testament, but I should, in all cases, call it copper. The translators of the Scriptures, though learned men, need not be regarded as expert chemists. Tubal Cain is supposed to have given origin to the VULCAN of the Greeks, not only from similarity of name, but profession: but I hesitate about etymological analogies: by learned and ingenious men, such as Dr. Swift in jest, and Mr. Bryant in earnest, etymology may be moulded into almost any shape that fancy and ingenuity may think fit to dictate.

" That *wine* from the grape, was an antideluvian discovery, does not clearly appear; it is said, Noah *began* to be a husbandman and planted a vineyard; nor does he seem to have been sufficiently aware of the effects of this liquor. From his time forward, however, it appears to have been a very common beverage both with the rich and the poor, for reasons that seem to me implied in the singular expression in the fable of Abimelech. Until the time of Isaiah and Hezekiah, in whose reign that prophet flourished, the juice was pressed out, not by machinery but by men's feet: at what time machinery was first introduced for this purpose among the Israelites, I find no passage that indicates. The regulation of the liquor in a fermenting state, seems alluded to in a passage in Job. The wine appears for the most part to have been made from a red grape.

" Chemical practice, however, must have been in a good state in Egypt, in the time even of Joseph. We find him directing his silver cup to be put into Benjamin's sack. The process of embalming also, was tedious but seemingly skilful in his time; for the physicians, who embalmed the body of his father Jacob, were employed forty days upon the business. These embalmings, (after taking out the intestines and the contents of the scull, pickling the body in salt and nitre, and drying it), were probably finished by a solution of some of the resins, (wherewith Egypt, Arabia, and Syria abounded,) in the liquid turpentines from the class of firs: for the resins could not have had an alcoholic solution, distillation being then unknown.

" That they were acquainted with *resins*, and many of their properties, appears from the composition of the sacred perfumed oil, directed to be exclusively prepared for religious uses by Moses, from oil impregnated with stacte, onycha, galbanum, frankincense, myrrh, cinnamon, and calamus. So also in the first book of Chronicles, mention is made of the oil of the spices, which seems to have been the holy perfumed oil, already noticed.

" *Oil* from olives is mentioned in various places in Exodus, Leviticus, and Deuteronomy. The Egyptians expressed oil also from the sesamum and the rape seed, but no passage occurs to me of the use of these articles among the Jews. The olive oil was used as a luxury to the person, as an article of food, 8 Lev. 26. and for lamps. This latter use of oil, though common to the Jews and Egyptians, was not known to the Greeks in Homer's days, probably from the dearness of the article. The fruit was pounded in mortars for the purpose of extracting the oil.

" That the resins for embalming were dissolved in liquid turpentine, is further rendered probably, in as much as pitch, tar, and bitumen were well known. This appears from many facts that may be referred to: but as the act of rendering oils drying by metallic oxyds was then unknown, as well as the act of distillations, and as rosin and burgundy pitch could not then have been known for the same reason, and as common pitch was too dark for the purpose, the process of embalming must have been as I have described it, so far as concerns the varnish.

" Moses is said to have been skilled in all the learning of the Egyptians; from them, doubtless, he derived his knowledge of precious *stones*, and *engraving* upon gems: of *dying* blue, purple, scarlet, and crimson, upon linen, the staple commodity of Egypt. The art of *gilding* and *plating*, both with silver and gold, appears also to have been known in his time, for wood and baser metals are mentioned as having been covered with these more precious substances. With respect to the golden calf which he made the children of Israel to drink, there appears to be some uncertainty as to the process employed. Stahl or Bergman first suggested its solution in liver of sulphur: the Bishop of Landaff (Watson) thinks he filed it. (I refer to his Essays.) And Professor Michaelis, of Gottingen, is of opinion that it was merely gilt wood.

"In 18 Gen. 8. Abraham is said to have set before his guests butter and milk, and in 32 Deut. 14. the butter of kine, and the milk of sheep are mentioned. The art of bread-making was well understood in early days, for leavened and unleavened bread are repeatedly noticed in the Old Testament. The first invention for bruising the grain and making meal, must have been by pounding in a mortar: when mills were invented does not appear. In 18 Gen. 6. Abraham directs Sarah to knead three measures of fine meal, which Goguet (1 Goguet 104) thinks implies the use of mills: an implication of which I do not see the force. There are, however, some passages in the Old Testament, wherein mention is made of mills and millstones.

"Soap and nitre, or the mineral alkali, are expressly mentioned by Jeremiah; 2 Jer. 22.

"Beer was certainly known in Egypt at a very early period: no mention of this beverage occurs in the scripture books of the Old Testament; but vinegar was in very common use for this purpose.

"I do not find any thing further in the biblical account of chemical facts worthy of distinct notice. The Jews seem to have had little taste for the arts, which, in the time of Solomon were at so low an ebb, that he found it expedient to send for workmen from Tyre. The luxuries of dress used by the Jewish ladies, are curiously and distinctly enumerated in the latter end of the third chapter of Isaiah; and the twenty-seventh chapter of Ezekiel contains an instructive account of the commerce of Tyre."—p. 11—17.

On the state of chemistry, as cultivated by the Egyptians and Phœnicians, our author has dwelt at some length, and has communicated many interesting facts. On the subject of glass, he observes,

"*Glass* appears to have been discovered by some Phœnecian sailors, who, making use of turf containing soda, (natron. nitrum,) to boil their pots, found the pots vitrified, and the ashes and the sand, run together into the transparent substance we call glass. According to Pliny, this was in very early times. The manufacture was commenced at Tyre, and the sand for the purpose, was chiefly procured from the banks of the Belus, a small river that still runs by St. John D'Acre, and called by the Arabs, Nahr Halou. The art of glass making, (for two thousand years a source of great gain to Tyre and Sidon,) appears to have passed from thence to Egypt, whose inhabitants in the time of Pliny and Diodorus of Sicily, were remarkable for their dexterity in manufacturing artificial gems, particularly imitations of the cyanus, (which I take to be not the sapphire, but the blue lapis lazuli,) the smaragdus or emerald, the sapphire, the hyacinth, and the carbuncle, or ruby, these include blue, red, and green coloured glass. I agree entirely with Bergman and Goguet, that the collossal serapis of nine cubits high, mentioned by Pliny, and the obelisk of four large emeralds in the temple of Jupiter, noticed by Theophrastus, and the transparent hollow column at the temple of Hercules, at Tyre, mentioned by Herodotus, were not real but artificial gems, composed of coloured green glass. That large columns of glass were not unknown to the ancients, still further appears from the seventh book of the Recognitions of St. Clement, wherein St. Peter is desired to go into a temple, in the isle of Arad, to see some columns of glass of great size. The Recognitions of Clement, indeed, like the shepherd of Hermas, and the other pious reveries, dignified with the title of apostolic fathers, (translated by Archbishop Wake,) are of very slight authority for a theological fact or opinion, but the very mention of a column of this nature, shows that the thing was considered as within the compass of art at that time. Indeed, I suspect all these emerald figures of great size, *might* have been glass varnished with a green coating: for coloured varnishes were in use in the processs of embalming among the Egyptians. Guyton Morveau has lately ascertained, that the large (supposed emerald) basin, called the sacro catino, which Bonaparte removed from Genoa to Paris, is coloured glass; for it is much softer than any genuine emerald, and it contains the defect of glass, which workmen call blebes. Rock crystal scrathes it."---p. 19—21.

Proceeding with the chemistry of the Egyptians, Professor Cooper next notices their knowledge of the arts of dying, their pharmaceutical preparations, &c. He afterwards gives a short sketch of chemical science as it was cultivated among the Greeks, Romans, and Chinese. On the chemistry of the Hindoos and other eastern nations, he thus remarks :

> "In fact, there have been chemical processes known among the Hindoos and Chinese from time immemorial, that European science cannot yet either explain or equal. The account given by Pliny, of Egyptian printing, no one conversant with calico printing will doubt of being derived from the artists of Indostan; whose colours are more vivid, and, (as I guess,) whose processes are more simple than any yet discovered by the Europeans. Their colouring drugs are not the same, nor are their mordants so complicated. Their red dye is from a gallium; for galls they use myrobalans; the mordant seems to me to be pencilled, and in some cases I have suspected chemical colours on their chintzes, that is, colours not raised by immersing the whole cloth in a boiling infusion of the colouring drug, but laid on, in the first instance, upon the precise spot where they were intended to appear. A second, or light red of this kind, I have long known, though its application requires much caution; but a full and deep red of the same description, that would supercede the necessity of dying the whole piece in the madder bath, would be a discovery invaluable to the European artist. The cuttings and polishing of precious stones, and the working in various metals, were certainly practised by the Hindoos long before any European knowledge of the kind appears. The Athenian ambassadors describe the glass drinking cups, *υαλινα εκπωματα*, in use among the Persians before the time of Alexander the Great. (Aristoph. Acharn. I. 2.)"--p. 47, 48.

The view of chemistry and the arts, from the middle of the seventh to the seventeenth century, i. e. from the taking of Alexandria by the Saracens, in 642, to the establishment of the philosophical academies in Europe, the first of which was that of Del Cimento, in Florence in 1651, is no less replete with valuable information. The great and distinguished men who pass before him during this long period, appear to have received each his due share of praise for their labours in the advancement of science, particularly of chemistry. For the aid which he received in this part of his undertaking, our author confesses himself greatly indebted to the elaborate work of Professor Bergman, the Historiæ Chemiæ Medium Ævum. The same ability is displayed by Professor Cooper in his examination of the respective labours of Black, Cavendish, Scheele, Priestley, and Lavoisier, and of subsequent chemical philosophers. The introductory lecture closes with some brief notice of the progress of mineralogy, which our author considers as the handmaid of chemistry.

In the notes added to this Lecture, and which constitute the greater part of the whole work, we find the same depth of research, and the same variety of illustration. The note on the *Papyrus* is one of the most interesting; we shall embody it among our pages, and with it close our extracts.

" *Papyrus.* The ancients wrote, 1st. on smooth lead. Hesiod's poems, deposited in the temple of the muses at Beœtia, were so written. 2dly. On boards planed smooth: on such were the laws of Solon, written in boustrophedon lines. These were the *libri in schedis*, the common books of the Romans. 3dly. *Libri cerei*, boards planed and waxed. These were written on with an ivory or metal pointed pen; hence *stylum vertere*, one end being used for writing, the other for erasure. 4thly. *Libri lintei*, where the wooden tablet was covered with linen; on such were the sybylline books, and some ancient laws written: sometimes I presume with atramentum; but Drummond and Walpole, in their Herculanensia, Diss. 7th, says, the linen was waxed. 5thly. *Libri in coria*, mentioned by Ulpian, lib. 52. were such as had an under layer of leather, to prevent the transparency of the first layer, as I think, from the description in 13 Plin. 12. 6thly. The *membrana*, which I also suspect to be a kind not so well dressed as, 7thly. the *pergamena carta*, which approached our parchment: a manufacture promoted by Eumenes, king of Pergamus. 8thly. Bark, paper *è cortice tœneotica.* 9thly. Coarse wrapping paper, used by tradesmen, made out of coarse paper and straw, *emporetica.* 10thly. The *Papyrus.* Consistence was given to all these by size, or by paste, made of flour, or by boiling the crumbs of fine bread. The membrana charta, the charta coriacea, the pergamena charta, and the charta papyri, were all liable to be moth-eaten, "aut tineas pasces taciturnus inertes," Hor. Ep. 20. For the various other denominations of paper, as the *hieratica*, or paper for religious treaties, the *liviana*, and *augustina*, or royal paper; the *fanniana*, from a paper-maker of that name, the *saitica* from Sais in Egypt, *tœneotica*, the *emporetica*, &c. I refer generally to 13 Pl. 12.

"The charta è corio, mentioned by Ulpian, I have already noticed. Justinian, whose institutes were published in the year 533 of our æra, enumerates tables, paper, and dressed skins. Literæ quoque licet aureœ sint, perinde chartis, membranisque cedunt, 2 Inst. tit. 1. sec. 33. Sed si titio petas tuos libros tuasve membranas, (qu. does not this imply that the parchment was not used for books?) Ib.

"Nihil autem interest, testamentum in tabulis, an chartis, membranisve, vel in alia materia est. 2 Just. Inst. tit. 10. sec. 12. Hence also it appears, that the letters were sometimes gilt, (embossed and burnished, from whence I suspect arose the practice of illuminating missals.)

"The paper books attributed to Numa, were certainly forgeries, as appears from the anachronism of their containing pythagorean tenets. 13 Pl. 13.

"The papyrus, whence our appellation paper, deserves further notice.

"The papyrus, according to Pliny, was made of the thin pellicles (phylyra) of the stem of the plant called papyrus, growing in the Nile, about ten feet high, in about three or four feet water.

(Bruce has given a plate of it.) The centre coat was best. When separated by a sharp-pointed instrument, and laid across each other at right angles, they were moistened, then pressed, and dryed in the sun. Generally, the saccharine mucilage of the plant itself, (a great part of which was an article of food,) was sufficient to give an even and smooth tenacity to the pellicles thus separated, when pressed. If not, they were moistened with a kind of paste, or starch, made of wheat flour and vinegar, then dried, and beaten with a mallet. Sometimes with a paste, made by boiling bread and straining it. The Romans, under the emperors, used to polish the papyrus, thus treated, with smooth ivory, and subject it to rollers and presses.

"In making up a book, the written paper was rolled on a stick or roller, *umbilicus:* the ends of the umbilicus, *cornua*, were much ornamented. So was the outside of the volume, (volumen, roll,) called *frons.* The title ςυλλαϐη (whence our syllable,) was then stuck on the outside. The whole volume might be about three feet wide, and forty or fifty feet long. The books found at Herculaneum and Pompæi, according to the late report of the Rev. Mr. J. Hayter, whom the Prince of Wales employed, about ten years ago, to examine and unroll them, are of papyrus upon wooden rollers: the leaves are from one to three feet broad, and when unrolled extend from thirty to forty feet. He says, the ink contains much gum, and no acid. Hence it should seem, that they were written on by means of a reed (calamus) dipt in the atramentum librarium of Pliny, which was fine size and lamp black. It was common to insert a piece of parchment between every four or five leaves of papyrus, to support them. Much pains was taken by the paper makers and bookbinder: thus Horace ad librum suum, epist. 20.

"Vertumnum, janumque liber spectare videris. (That is, you will be sent to the Forum, where these statues were erected.)

"Scilicet ut prostes, Sosiorum pumice mundus. (Polished with the pumice, and for sale at the bookstore of the Sosii.)

"Sometimes the leaves before writing were first polished with a tooth, 13 Pl. 12. For more on the subject of papyrus, see 5 Herod.

58. 4 Theoph. 9. 13 Pl. 11, 13. Drummond and Walpole's Herculanensia, Dissertation 8th, and Bruce's travels, who has given a good plate of the papyrus.

"Job xxxi. 35. talks of writing a book. I think, with many divines, this is a sacred drama of eastern origin. If so, this book implies the use of papyrus at an early date. See 1 Gog. 187.

"Phylyra, 13 Pl. 11, is not only the name for the finer interior filament of the papyrus, but of the maple, the sycamore, the beech, the mulberry and the linden tree, all which were occasionally converted into paper, when sized, beaten, dried, and rolled. The common paper in the time of the emperors was from nine to twelve inches square.

"The papyrus paper was succeeded by paper made of cotton, or at first perhaps of silk; for although the cotton paper acquired the name of charta bombycina, yet it is highly probable, that the refuse silk was first applied to this purpose, as in China. The Indian, or finer silk, was sericum, (inter sericos jacet pulvillos,) the inferior, or Syrian silk, was the bombycinum. By and by, the frauds of the paper-makers, substituted the byssus, or cotton, but still it was sold as silk paper: till coming into common use, all the cotton paper retained the name of charta bombycina. The papyrus continued in use at Rome from about two hundred years before Christ to the end of the eleventh century, when many of the papal bulls, according to Father Mabillon, were written on papyrus. Montfaucon mentions a manuscript on this paper in the king's library at Paris, of the date 1050. Parchment was also still in use at the same period."--p. 163.—168.

In the course of our labours we have frequently, and with great pleasure, borne testimony to the rapid improvements in American typography. On the present occasion, however, we are compelled to remark, that the mechanical execution of the present volume would disgrace the state of the arts as cultivated by our Plymouth forefathers.

Art. III. *An Essay on the* Bilious Epidemic Fever, *prevailing in the state of New-York. To which are added, a Letter from Dr.* James Mann, *Surgeon General to the Army, and a Dissertation by Dr.* John Stearns, *delivered before the State Medical Society, on the same subject. With Notes and Observations on these productions. By* Christopher C. Yates. Albany. H. C. Southwick. 8vo. pp. 48. 1813.

In the first volume of the Register, p. 87—96, we offered to our readers a brief analysis of Dr. Strong's Dissertation on the Petechial or Spotted Fever, as it prevailed in Connecticut, and in some of the eastern states. In the same volume, p. 226—244, a full view was taken of the able Report of the Massachusetts Medical Society, upon the same disease, as it appeared in that state, accompanied with some editorial remarks upon the peculiar character of the disorder. In our second volume, p. 440, we announced the treatise of Dr. North. Beside the reviews of these works, which, we believe, are all that have been given as distinct publications on the spotted fever, several original communications on the same disease may be found in the pages of this journal. We state this, in order to facilitate the inquiries of those who are desirous of obtaining all the information they can relative to the epidemics, which, within these few years, have caused so great mortality in the United States.

The disease, which is the subject of the pamphlet before us, like the epidemic lately so prevalent in the eastern states, has, from the peculiar character which it assumes, and the fatality which accompanies it, deservedly attracted the attention of medical practitioners. The remarks which have been made upon it are, as yet, confined chiefly to the ephemeral columns of the newspapers, and indeed the pamphlet of Dr. Yates, with the exception of some few pages of it, is made up of materials from these sources. But it is matter of little moment through what channel the opinions of our medical brethren are communicated to the public, provided those opinions be deliberately formed, and candidly given, without prejudice or illibcrality, and are the result of attentive observation and experience. That such, however, is not the fact, and that the opinions which have been offered on this disease have, in a majority of instances, had their origin in a partial and erroneous view of its nature, and that they have been maintained for the purpose of supporting some pre-contrived theory, and of giving plausibility to some favourite practice, is sufficiently evident from the general complexion of most of the essays on the subject which have come within our notice. Different physicians, living in the same district of country in which the disease prevails, often witnessing the same cases of the disorder, laying claims to equal experience in the management of it, and boasting of equal success in the result of their practice, are the abettors of theories and modes of treatment diametrically opposed to each other. The disease, says one, is purely inflammatory, and depends upon a sthenic diathesis of the whole system, copious depletion is indicated, and large and repeated blood-letting is had recourse to. The reverse of all this, says another, is the fact. The disease is, from its commencement, characterised by every symptom of the lowest species of typhus, and to arrest its putrid tendency, the most powerful and diffusible stimulants are requisite, and brandy and laudanum, spiced wine and æther, are poured down without measure. We will not insult the understanding of the reader, with facts of this kind in his recollection, by introducing any arguments to prove, that the great mortality of the epidemic, now prevalent in this state, like that of the spotted fever of Connecticut, has been caused by such extraordinary and unjustifiable methods of treatment.

Our opinion of the nature of the present epidemic, (if strictly speaking, it may be called an epidemic,) and of the method of cure, which we believe will be found most successful, and which, indeed, as far as our experience goes, and from all that we can learn, has actually proved the most beneficial, may be found in a preceding article in this number.* The name, *Peripneumonia Typhodes*, under which this disease is there described, appears to us to convey the most accurate idea of its nature, and our subsequent opportunities of observation, since that article was penned, give us additional reason to adhere to the opinion there advanced. That the present epidemic is a "new calamity," and "unknown" before in this country, we can no more admit, than that it is the yellow fever of the West Indies; and we regret that any writer of respectability should so far have committed himself as to have pronounced such an opinion. The powerful agency of climate, season, temperature, the local circumstances of country, variety of situation and of constitution in the origin and modification of diseases, are well known to all who are conversant with the history of epidemical disorders; and to this agency, we have the highest probable evidence, we may attribute whatever peculiarity of character this disease has assumed. But we return to the Essay of Dr. Yates.

The fever here described under the name of bilious epidemic fever, made its appearance, according to Dr. Yates, in the city of Albany, in October, 1812. The few cases which then occurred not being characterized by any peculiarity in its symptoms, excited no suspicion. About the middle of December many were attacked with it in a severer degree, but still there was no particular cause of alarm until the beginning of the following month, when a few cases assumed the deceptive appearance of violent pneumonic inflammation, and in which the ordinary treatment, instead of removing the disease only hastened it to a fatal termination. During the month of January, many patients who were attacked with the disorder died, and the "clashing practice" adopted by different practitioners, increased the mortality. From the success of the method of treatment pursued by Dr. Yates, he was induced to publish his observations on the disease, which he did on the 26th of the same month, in the newspapers of that city. His subsequent practice, after this period, afforded him opportunities of becoming more familiarly acquainted with the nature of the disease, and enabled him to enter more fully into a description of its symptoms, nature, and treatment. We shall make an extract or two from this part of his work.

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* See Dr. Hosack's observations on the Peripneumonia Typhodes. See also Dr. Williamson's observations on the Malignant Pleurisy.

"The REMOTE CAUSE of this fever appears to be *general*, being confined to no particular district, town, city, or village. From this circumstance we are induced to consider it as existing in the air: how or from what cause we cannot tell.

"The EXCITING CAUSES may be various; intemperance in eating, or drinking spirituous liquors, fear, anxiety, exposure to excessive heat or cold; in short, all the causes which generally bring on common colds.

"The PROXIMATE CAUSE appears to be a secretion of morbid, acrid matter, or vitiated bile; this secretion taking place in so large and important a gland as the liver, on whose healthy action the division and assimilation of our food depends, and the consequent purity of the blood, has a tendency to excite, create, and accumulate the sudden, distressing, and alarming symptoms, which, as it were in a few minutes, usher in this disease."—p. 18.

" This disease is confined to no particular stage of life. Children and old people were less liable to it than the middle aged and young. Men were much more subject to it than women.

" PREMONITORY SYMPTOMS were not always discoverable. Sometimes a lassitude and indisposition to action, and eratic pains through the chest and sides, preceded the attack for a day or two, and sometimes the pain in the head and back were so light for two or three days, that the patient felt no disposition to make serious complaint.

" The GENERAL SYMPTOMS of an attack of this fever are,

" 1st. *Cold chills*, which last but few hours, and are succeeded by,

" 2d. A degree of *heat on the surface*, little above natural.

" 3d. *Pain in the head*, arms, small of the back, and lower extremities.

" 4th. The blood vessels of the eyes preternaturally distended.

" 5th. *Tongue* pale and moist, with little fur.

" 6th. An uncommon degree of languor and debility pervading the whole system.

" 7th. More or less nausea, and sometimes vomiting.

" 8th. *Pulse* weak, soft, and a little quicker than in health.

" An increase or severity of these symptoms, premonish an attack which forms the most serious state of this disease, in which case

" The *chills* assume a degree of oppressive anguish to the suffering patient, which to some has been more intolerable than any other symptoms, and recur frequently during the first twelve hours; many, however, do not suffer these chills to this excessive degree:

" The *pain in the head* becomes more excruciating, and is not confined to one part; the forehead, back and sides are alternately affected:

" The *eyes* feel heavy and painful, and their vessels become more turgid with blood, which gives them a dull red appearance:

" The *face* exhibits a universal flush in those who in health were not marked with distinct red cheeks, those who were, now have their cheeks more of a *livid* than red colour:

" A pain more or less severe in the *right side*, in the region of the gall bladder, passing up towards the neck, and settling between the shoulder blades:

" Faintness, delirium, a suffocating sensation across the *breast*, with little or much difficulty of breathing, catching at half inspirations, as if the lungs could not be filled with air, not from a painful sensation, as in pneumonic affections, but an apparent repugnance in that organ to inhale, as if the air were noxious or impure.

" *Tongue* continues pale in most cases during the continuance of the fever, though in some few instances dry, (and then only for a few hours at a time) and of a yellowish or light brown cast, *fur* trifling.

" Pain in the *back* and *extremities* much increased.

" A cough and difficult expectoration usually attend. The phlegm is in many cases accompanied with a little blood, but mostly only tinged with it, evidently owing to the violent exertion of coughing, or it probably issues from small ruptured blood vessels about the throat.

" The state of the *stomach* appears the same as in common bilious fever, being more or less affected with nausea at the commencement. Some vomit, others incline to vomit, or feel but the slightest degree of nausea. When the vomiting is spontaneous, the matter thrown up is invariably yellow or green coloured.

" The *bowels* exhibit nothing peculiar until acted on by medicine.

" The *skin* easily disposes to moisture after the stomach and bowels have been well evacuated. I have found it unnecessary, in most cases, to encourage perspiration by warm drink; an additional blanket or two will suffice, if the patient does not readily sweat under the usual covering.

" The approach of *death* is indicated by a cessation, for many hours, of all distressing symptoms, respiration, instead of laborious, now becomes less difficult, though short and hurried, and seems to excite little uneasiness: the countenance and surface of the body become livid, or of a lead colour, resembling the body of a drowned person; the patient, and attendants, unaccustomed to these appearances, are flattered with the hope of a recovery."—p. 20—23.

In some further remarks on the nature of this disorder, the author remarks, "That the affection of the lungs in this disease is not primary, but sympathetic, appears to me as clear as the sun at noon day," p. 27. In support of this opinion, he states the powerful efficacy of emetics and cathartics in unlocking the biliary vessels by which the oppression on the lungs "immediately yields or vanishes." We are not disposed to controvert the theory Dr. Y. wishes to establish, provided a successful mode of practice be the result. But for ourselves we cannot admit the position attempted to be maintained, that the prominent characteristic of the disease evinces its bilious nature; and the facts which have come to view from the dissections which have been made of those who have died of this epidemic, instead of proving the liver to be the "reservoir," whence the noxious matter of the disease is diffused through the system, clearly establish the fact that we must look to a very different part as the principal seat of the mischief. We therefore cannot but object to the name by which Dr. Y. has distinguished this disorder.

His method of cure is thus briefly stated.

"The *method of cure* which I have pursued in this disease, I shall state in a few words. When called to a patient labouring under the symptoms of this fever, my first prescription is, *in all cases*, an

"EMETIC of tartarized antimony, sometimes combined with *ipecacuanha*, and sometimes with *calomel*. If this operates, the discharge from the stomach is in *every case* yellow or green bile in great quantities, sometimes mixed with or followed by a whitish, slimy, compact substance; if it operates on the bowels, their discharges are dark coloured, mixed with green bile; and are generally *very fœtid.* If the emetic does not operate as freely as I wish, I repeat the dose. I follow this prescription, notwithstanding it may have operated on the bowels, with a cathartic of jalap and calomel. I hardly recollect a case in which a cathartic did not operate on its first exhibition. I have in no disease found the bowels more susceptible of being moved by a single dose. The cathartic always produced copious evacuations of bilious matter, sometimes assuming the appearance of *strong lie.* An additional dose on the third day of the disease, often cured my patient in the *milder attack.*

"In the *severer attack*, I commence in the same manner, with first an *emetic*, and then a *cathartic;* if the symptoms become stronger or more violent, my exertions are proportionably so to evacuate the contents of the stomach and intestines.

"If the patient grows weaker, and the symptoms do not abate, I repeat the emetic; this throws up in some cases greater quantities of bilious matter than the first I administered. Relief invariably succeeds this last evacuation. I now continue cathartics in smaller doses, but often repeated; for this purpose I have chosen of jalap and soluble tartar equal parts; of this compound I gave twenty grains every two or three hours, so as to keep the bowels in motion until the pain in the side and distress of breathing yield; after which I continue it in a limited degree until the evacuations change to a more natural colour, which is generally not till the 6th or 7th day. It is very common for the patient, while in a state of apparent convalescence, to have suddenly a return of pain in the head, or side, and distress in breathing. I now again have recourse to a powerful emetic, and this relieves the patient immediately after its operation; the discharges are as copious, and to appearance, as bad as they were in the first stage. These pains always indicate a collection of morbid matter.

"I have not, since the 26th of January, given *any other medicine* in this disease than emetics and cathartics. My whole attention is confined to a removal of the morbid bilious secretions which are unquestionably collected, and continue pouring into the gall bladder: probably giving rise, by distending that viscus, to the pain in the right side.

"I have not found it requisite in any case to use medicinal tonics to restore my debilitated patients; whenever the bowels and liver resume their natural and healthy action, the appetite returns, and food becomes the best and most natural tonic, beginning with weak soups, and gradually proceeding to more solid substances."—p. 23—25.

We have nothing to remark upon the treatment adopted by Dr. Y.; it doubtless proved very successful in *his* hands, as he has mentioned. The letter of Dr. Mann, and the dissertation of Dr. Stearns, appear next in order in the Essay. They are inserted at length in the present number of the Register, and are left to the judgment of the reader. Of the notes which our author has annexed to them, we are constrained to say, that they are not written in the temper we could wish, and which, indeed, the respectability of his opponents and the nature of the subject required. After all, the theory which Dr. Yates has advanced of the nature, seat, and proximate cause of this disease, is, in our opinion, insufficient and unsatisfactory; and the attempt to explain the phenomena of general disorder which pervades the system in this epidemic, by referring them to the *liver* as their source, is indeed taking a limited and local view of the subject. The best part of Dr. Yates' performance is that which contains his animadversions upon the unjustifiable and destructive stimulant practice of treating the epidemic, and for his early and salutary remarks we present him our warmest thanks.

DOMESTIC INTELLIGENCE.

THE EPIDEMIC NOW PREVAILING IN THE STATE OF NEW-YORK.

Through the liberal exertions of our friends we are enabled to present our readers the valuable communications which follow, on the epidemic now prevailing in this state. The interesting nature of the disease itself, the great anxiety which it has created, and the alarm which is already produced in this city by the appearance of some few cases of it, have induced us to occupy more of our pages with the discussion of the subject than we otherwise would have done. From an attentive perusal of these communications, as well as of those in the preceding part of the Register, we are persuaded that the disease is not of that fatal nature which many have represented, and that the mortality which has attended it, has been caused, in most instances, by the empirical and unjustifiable practice that has been adopted. The letters of Dr. M'Reynolds and of Dr. Hudson deserve to be particularly attended to, from the important accounts which they have given of the morbid appearance upon examination after death.

An Account of the Epidemic as it lately prevailed at Black Rock, near Buffalo, in 1812, *in a Letter from J. D. M'Reynolds, Surgeon of the Army, to Dr. S. Marshall, Surgeon at the Navy Hospital, New-York. Communicated to Dr. Hosack by Dr. Marshall.*

Black-Rock, Niagara River, Jan. 20th, 1813.

Sir,

Having seen, in a late New-York paper, a statement relative to the extent, fatality, and treatment of the prevailing epidemic in this neighbourhood, I am induced to believe, from the treatment therein mentioned, that you have not seen a correct history of the disease. Under that impression, I transmit the following account, believing you are interested in the nature of a malady that has produced greater mortality on this station, than the sword of the enemy at every other, since the declaration of war. From the 15th Oct. to the 26th Nov. (the date of its commencement,) there was one continued rain, with few exceptions; the wind s. w. during which time the soldiers and seamen were equally exposed in open tents. At the date last mentioned, the wind was w. n. w.; nights cold The symptoms of the disease, were a slight chill, violent pain in various parts of the thorax, generally on the right side; laborious respiration, great thirst, great loss of strength, and unwillingness to motion; a depressed irregular pulse, that became full and open after blood-letting, though sometimes the disorder required the second, third, and often the fourth bleeding before this effect was produced. There was but little cough in the first days of the disease, but abundant evidence of a continual irritation in the bronchia and trachea. Death sometimes succeeded within forty-eight hours from the first attack, though most generally not until the third or fifth day; prior to which, all the symptoms became more violent, and the patient died of suffocation. Some patients, a few hours preceding death, had all the symptoms of phrenitis. I supposed it a pneumonic inflammation, and prescribed for my first patient, blood-letting, epispastics, cathartics, and sudorifics; he, however, died on the third day.

I examined his body, and in a few days, five other bodies; opportunities occurring almost every hour, from the number of troops stationed at this place. The appearances after death were a high state of inflammation in one, and sometimes each of the lungs, a large quantity of extravasated serum; and a morbid adhesion of the lungs to the pleura. In fact, there was no part of the thoracic viscera exempt; in some the pericardium, in others, the mediastinum, or diaphragm appeared to have been most inflamed. I observed in no case, a diseased state of the liver: except in the superior part, a slight degree of inflammation, from its contiguity to the diaphragm, when that membrane had been much affected. I mention this particularly, from the circumstance of some surgeons of the army having examined a body that exhibited some marks of a diseased liver. There can be little doubt but that in this instance, the subject must have been affected with some hepatic disease before taken with pneumonia. The great want of success that had attended the limited use of the lancet, induced the physicians to change their plan of treatment to stimulants and cordials. To this all the practitioners of the neighbourhood and army subscribed, (Dr. Young, of the 14th regiment, excepted,) which gave rise to the note I observed in the New-York paper. From this statement you will pronounce the disease, the pneumonic inflammation of Dr. Cullen; as such I have treated it, although I am pained with the recollection of losing nine patients under its influence. I am well assured, under different circumstances, the number would have been much less. The hospital being open and cold, my having to attend fifteen or twenty wounded, many of whom were officers; there being no marine guard to keep convalescents within the limits of the hospital, which is a half mile distant from the navy yard, prevented my seeing patients for twelve, and often twenty-four hours after the commencement of the disease; and you well know it is a prominent feature in a sailor's character to keep off the sick report as long as possible. Through this loss of time in the commencement I attributed the major part of the deaths; the violence of the inflammation being such as to destroy the vitality of the part.

Observations on the treatment. I ascertained that active cathartics were not advantageous in the cure, on account of their weakening the powers of life without abstracting the excitement. I preferred sulphate of soda, senna and manna. Sudorifics have been of but little service, either from the state of the apartments in which the sick were confined, or the nature of the disease. Blisters, after copious venesection, gave ease in translating the excitement. I gave, during the first three days, a powder of calomel and ipecacuanha, three grains each, every three hours. I employed the serp. virgin. rad. and dressed the blisters with ung. mer. fort. In all cases where a slight ptyalism was produced, the patient became evidently better. Great advantage was derived from the inhalation of steam, and from the warm bath, *but all medicines were useless if not preceded by an early and bold use of the lancet.* I have had more than seventy patients of the disease, and have twelve at present, and am myself convalescent. I am informed that the citizens suffer much from the influence of a disease that has become doubly mortal from the injudicious and imprudent publications that have recently appeared.

I am, with respect, Sir, yours,

JOHN D. M'REYNOLDS.

DR. S. MARSHALL.

N. B. Our seamen had been removed on board several small vessels, some time before the commencement of the epidemic.

Remarks on the Epidemic of this State, in a Letter from Dr. Daniel Hudson, dated Geneva, January 12th, 1813.

The pestilential epidemic, which has for some time past been raging on the Niagara frontier, is now making its appearance in our neighbourhood, and seems to have excited some alarm, from a belief that it is of a contagious character. I have been requested to give a short description of the nature of this disease, with a view to quiet fears which are altogether groundless. Having been constantly employed in cases of this destructive malady, from its commencement at Niagara, I am, from actual experience, enabled to assert that it is not of that class of diseases which may be communicated by contagion.

The cold humid state of the atmosphere, for some months past, has, no doubt, been a powerful agent in producing a predisposition to pestilential and inflammatory diseases. In addition to this, our unfortunate army has been unavoidably exposed to hardships, fatigues, and privations, which are incident to a campaign at a late season of the year, and in a new country. The most common form in which it makes its attack is with cold chills, succeeded by acute lancinating pains in some part of the thorax, which are greatly aggravated by a full inspiration. The pain is sometimes more severe in one side than the other, and sometimes occupies the whole region of the chest. The pulse becomes full and frequent, the respiration difficult, great thirst, furred tongue, and frequently a severe pain in the head. In those cases which terminate fatally, these symptoms increase; respiration becomes much hurried, painful, and laborious, a rattling in the throat, profuse expectoration, sometimes streaked with blood, a ghastly appearance of the countenance, cold feet and extremities: the difficulty of respiration continuing, the patient, as if suffocated, expires in the most distressing agony. In other cases the disease, after a few days, assumes the typhoid type, and is sometimes, though not always, connected with the last mentioned symptoms, and in this complicated state puts a speedy termination to the life of the patient. The blood, when drawn, exhibits the most unequivocal signs of extensive inflammation. The following are the appearances on dissection.

The heart, pericardium, lungs, pleura, and diaphragm are generally found in a state of inflammation: in some instances, the liver is inflamed, commonly that portion which lies in contact with the diaphragm. In some cases a complete hydrothorax is found to have taken place; the pericardium containing a pint or more of water, of a semi-transparent or pearl-coloured appearance, and the cavity of the thorax a quart or more of the same kind of fluid; the heart much enlarged and abraded of its fine delicate membrane; the lungs adhering to the pleura, and much diminished in size, when the hydrothorax is very considerable.

I have, in this statement, given a description of the disease in its most violent form; but as it makes its attack with different degrees of severity, it is obvious that the method of treatment will require to be graduated accordingly. I consider this disease as in nowise different from peripneumonia, excepting, that a more general inflammation commonly takes place than what that disease has heretofore assumed. This, however, is referable to the pre-disposing causes above mentioned, as well as to the immediate exciting cause, which is generally that of a violent cold.

I am well aware, that much clamor has been raised against bleeding, the propriety of which, in some cases, and in some stages of the disease, would be very questionable; but from my own observation, in more than one hundred cases, and from the authority of Dr. Craige, (whose experience in this complaint has been very extensive, and in whose skill and veracity I have much confidence,) I am prepared to assure the public, that in recent and violent attacks, bleeding is indispensable: blistering and profuse sweating also have been of eminent service. If the disease assumes the typhus symptoms, nothing has proved so successful as mercury, exhibited in such a manner as to produce ptyalism. If much acute pain remains during this stage of the disease, stimulants are not found so successful as in common cases of typhus; the stimulating plan, therefore, if entered upon, should be conducted with great caution, for if much inflammation remains it will bring on a recurrence of all the symptoms in an aggravated form.

DANIEL HUDSON.

Geneva, Jan. 12, 1813.

Observations on the Prevailing Pneumonia of New-York, in a Letter to Benjamin Waterhouse, M. D. &c. from James Mann, M. D. Hospital Surgeon of the United States Army; published in Jan. 1813.

Dear Sir,

At the time of making the statement, which first appeared in the Vermont Centinel, respecting the sickness among the soldiers of the army, at Burlington, and which was made public with the sole view of counteracting false and exaggerated reports; it was my intention, when more at leisure, to give in detail, a particular history of the disease, not only as it appeared at Burlington, but at other cantonments of the army.

The prevailing epidemic is denominated by nosologists, Pneumonia. Its attacks are made under the various forms of *sthenic* and *asthenic* diathesis, while those varieties of the disease mostly depend upon the habits established prior to the attacks. In many of the first cases, among the soldiers at Burlington, the disease proved fatal in a few days, in some instances, within twenty-four hours. The following are the most prominent features of the disease, under its most deadly form: heat of the body below the standard of health, extremities cold, pulse contracted and hard, not so hard as is usually found in pleurisies, which indicates the necessity of bleeding; respiration very laborious, not apparently so much from sharp pains through the sides and breast, as from a sense of suffocation. When asked, the patient says, that he does not feel much pain, but a weight upon the chest, an oppression arising from inability to inhale the air; a sensation, one would imagine, similar to that which might be produced by breathing atmospheric air deprived of its oxygen. This suffocation, accompanied with small pulse and general coldness, may be the consequence of some condition of the lungs, which renders that organ incapable of absorbing through its membranes, in due quantity, the vital principle of the atmospheric air, or its oxygen. There is often a copious expectoration of glairy viscid phlegm, sometimes uniformly coloured, or streaked with blood, while no relief is procured by its discharge from the bronchial tubes. The above form of disease is the PERIPNEUMONIA NOTHA of the ancients, and it is not unworthy of notice, that it generally falls upon those who are in habits of intemperate potations of spirituous liquors. Upon laying the chest open to view after death, there is the appearance of inflammation upon the lungs, and congestions within the vessels of that organ, with adhesions to the circumadjacent parts, without suppuration; its surface covered with a yellowish, gelatinous, semi-putrid extravasation; its spongy texture is lost, and assumes, in some measure, the firm compact state of the liver. The physician, in the above described cases, hesitates, and cautiously employs his lancet. These cases, however, are few, compared with the multitude seized, which generally proved fatal under every method of treatment: while a fortunate administration of stimulants, in a solitary case of the disease within my knowledge, induced by an indiscriminate use of them, a most deadly practice. Such a practice was introduced, for a short period, by a physician who was called to attend the sick, at a time when the physicians of the army were overburthened with numbers. Could you have believed, that at this enlightened period, brandy and wine in profusion, with soups, were the remedies principally depended upon by him in every form of these pneumonic affections? However, prior to the employment of stimulants, an emetic and cathartic were administered; blisters were employed; the lancet was forbid by him under every form of this formidable epidemic. It has been already observed, that cases occurred where the physician hesitates and doubts the propriety of bleeding. The cases under this type are not one in twenty. It is worthy of notice, that in two, which came under my observation, where blood-letting was cautiously employed, the accidental opening of the orifice, during a restless night, produced so much relief, even a solution of the fever, as led to a persuasion, that in some instances, where the disease had proved fatal, bleeding had been employed with too much timidity. In one case, the patient apparently sinking under the above form of the disease, seemed to be rescued from the grave by six grains of opium, administered in divided doses of one grain every two hours, and a tea-spoonful of æther every half hour. The same treatment in other similar cases, was not attended with the like success.

In all cases of the above form of the disease, blisters are employed upon the sides, breast, and back; in some, these seemed to be of use. Where the body is torpid and cold, sinapisms, warm and heated applications to various parts of the body, especially to the lower extremities, are necessary. It is proper to observe, that neither the stimulant, diaphoretic, nor depleting method of treatment is but seldom accompanied with success, in the most violent form of the disease. Its progress is rapid, and assumes in a few hours, the strongly marked symptoms of approaching dissolution; and it may be added, that even where suffocation with a rattling is commenced, and the heart ceases to perform its office, that the muscular strength of the patient is not remarkably impaired. Several have been seen to walk the room a few hours before death.

Much the largest number seized with this extensive epidemic, are under a *sthenic* form, with strongly marked symptoms of inflammation, and require the depleting and antiphlogistic method of treatment to its full extent. Stimulants here evidently hasten the patient into the first described fatal state of the disease. At the first attack, with strong arterial action, pains through the sides and breast, much heat, difficult respiration, little or no expectoration, and this tinged frequently with blood, bleeding is employed, from one to two pints. It is often necessary to repeat the operation. In a few instances two quarts have been drawn from the arm of the patient in the course of the fever with good effect. A cathartic of jalap and calomel, or calomel per se, is then administered. This, it is found necessary to repeat in some cases; but as the disease is frequently accompanied with diarrhœa, drastic purges are employed with caution. The diarrhœa, at times, is so profuse, that cathartics are not indicated while it is necessary to check these alvine discharges by opiates. The diarrhœas, which accompany this fever are not critical, they are not checked as the fever abates, except by opium: remaining obstinate for a long time even after the return of the appetite. After bleeding and cathartics, under this form of pneumonia, calomel in small doses, combined with opium, is administered with benefit; and where a gentle spitting is produced by its employment, pain in the breast is mitigated, or abates, laborious respiration subsides, copious and laudable expectoration, and moist skin supervene. To promote these last, vin. antim. and elix. paregor. prove an excellent medicine. When the antimony occasions too frequent evacuations by the bowels, small and repeated doses of pulv. dover. are substituted. When, after the inflammatory state of the disease is in a measure removed, more especially, where nausea and anorexia exist, emetics of ipecac. are advantageously administered. Blisters, in the course of the disease, are indispensable to remove stitches in the breast and sides, after blood-letting is carried to its proper extent; believing with others, that there is a blistering, as well as a bleeding, and emetic period in fevers, the bounds of which being ascertained, should never be intruded upon by each other. As this disease has not been confined to the soldiers of the army, but has made its attacks and ravages in various places, about the same time, over a very extensive tract of country, it may be fairly inferred, that its spread far and wide is not the consequence of its contagious nature, any more than it is the effect of severe duty, negligence of officers, want of the necessaries of life, as it has appeared among the soldiers, as has been repeatedly represented in the public papers. It may be viewed as an epidemic produced by some latent cause: an unknown state of atmosphere, and, like all extensive epidemics, is more severe and fatal to such as are unavoidably, and in many instances, imprudently exposed to various additional exciting causes. Those who have attended to the progress of epidemics, may have observed, that among thousands who have been subjected to their influence, that a few have been treated with severity by the disease, and some have fallen victims to its rage; while the deaths which have occurred, might be imputed much less to the nature of the epidemic, than to the various exciting causes which co-operated to produce its mortality. The first, perhaps, in all cases, cannot be avoided; while the exciting causes, giving to the disease a severe or fatal form, is within the ability of man to obviate. Among the various exciting causes productive of a severe disease, under the present epidemic, only one will be noticed, viz: an intemperate use of ardent spirits. It is a fact, well known among the physicians of the army, that the disease has been fatal mostly among the men who are in habits of great intemperance. It has been also ascertained from various sources, that this disease has been most severe and fatal among that class of citizens who indulge in spiritous potations. It is a vulgar and mistaken opinion, that the use of spirits secures the body from the attacks of disease, and fortifies it against cold, or its effects; so far from effecting either of these, ardent spirits aggravate the injurious consequences of cold, and frequently predispose the body for the reception of a disease, under its most severe and perhaps mortal form.

Is it not a singular fact, that no notice is taken of the prevailing epidemic, and its mortality, among the citizens, by the several printers, when with much avidity they swell their columns with exaggerated reports of the disease, and its disastrous effects among the soldiers? Since it is well ascertained, that less in proportion to numbers who have been attacked with it, have become victims in the army, than among the citizens; although the last are better accommodated in houses, less crowded than hospitals, and surrounded by friends for nurses, generally more assiduous and attentive to their wants when sick, than soldiers, who are bound to each other by ties less strong than those of consanguinity. Is it a new and singular circumstance, that soldiers are more subject to diseases than citizens, independent of latent atmospheric agents, as causes? When it is known, that more than four thousand soldiers have been seized with this epidemic, will it appear strange and mysterious that many deaths have occurred, and the officers not be implicated among the causes of the disease and its fatal event; when citizens are daily falling under its effects in towns and villages far and wide, in every district of the country. After being acquainted with the above facts, will it appear candid or ingenuous to state, that the physicians of the army are *ignorant,* more *ignorant* than the physicians of the country. Are not the means of information open equally to all? Were not the physicians of the army educated at the same school with the citizen practitioner? Did not government, out of a flood of applications, select and appoint those who had the fairest pretensions?

The communication is concluded by observing, that there is no essential disagreement among the physicians of the army, respecting the nature of the prevailing epidemic, and method of treatment. That it is not a new disease, as has been represented by some, the physicians of the army are all agreed. Perhaps it would appear invidious to say, that the epidemic is represented a non-descript by some physicians, as an apology for the want of success in the management of it. In consequence of the swelled accounts of the deaths in the cantonment at Greenbush, where there were from one thousand five hundred to three thousand, during the summer and autumnal months, and through which more than seven thousand men have passed since the month of May, and at which place have been left all their sick, and many of their convalescents, while passing, it may be necessary to state, that the whole number of deaths at this post, from that period to the present, does not exceed eighty-five.

With much respect, I am, &c. JAMES MANN,

Hospital Surgeon, U. S. Army.

DR. BENJAMIN WATERHOUSE.

Remarks on the Prevailing Epidemic, by John Stearns, M. D. of Albany. Read before the State Medical Society in February, 1813.

Although a few sporadic cases of the epidemic, which now prevails in this city, and the country adjacent, made their appearance in the fall; it was not till the middle of December last, that it began to be much noticed. From this time it gradually increased to the present period.

The symptoms which characterise this disease, are:

1st. Cold chills, which, in some instances, continue twenty-four hours, and are sometimes succeeded by a temperature, unequally distributed over the surface; while the face and trunk of the body are of a heat higher than natural, and considerably flushed, the extremities are cold. In some instances the chills are but slight; the violence and danger of the disease are generally proportioned to the length of the chill.

2d. Great and general prostration of strength, frequently accompanied with fainting.

3d. Extreme pain in the head, thorax, and sometimes in the extremities, accompanied with dyspnœa and hurried respiration; when the pain assails the head with severity, it generally terminates in delirium. The pain is sometimes severe in the back part of the head and neck, but generally affects the forehead, producing an extreme soreness in one, sometimes in both eyes. When the pains are not violent, the patient complains of a vertigo, and a dull, heavy sensation in the head, with an oppression at the stomach, nausea, and sometimes vomiting.

4th. The tongue is generally, at first, dry and covered with a white fur, which, as the disease advances, is in some instances converted to a dark brown.

5th. In violent cases, the face appears tumid and livid; the eyes are remarkably protruded, exhibiting ay ellow aspect.

6th. The urine generally flows in unusual large quantities, and is sometimes very high coloured.

7th. The pulse in the incipient stage is small, weak, tremulous, and in some instances suspended; as the cold stage subsides, the pulse rises, but seldom to a degree of natural strength or fulness; it appears to labour under a violent oppression, is often irregular, and generally slower than natural.

8th. The stomach is generally loaded with a vast quantity of gelatinous slime, which in tenacity resembles the white of an egg.

9th. When a diarrhœa does not usher in the complaint the bowels are torpid and extremely costive; ordinary cathartics seldom produce their customary effects.

10th. A cough, with an expectoration of yellow mucus tinged with blood, in some instances, commences with the disease; as it advances, clear blood is often discharged from the lungs and nose.

11th. A viscid sweat is generally thrown out upon the surface spontaneously, which is never critical, and if copious, is always injurious.

This viscous fluid is not confined to the surface. The saliva, gastric juice, and, indeed, every secreted fluid participates of the same disposition, and evinces a morbid affection of the whole secreting system.

The preceding phenomena indicate the existence of a disease entirely unknown in this section of our country. It appears to participate of two distinct and opposite natures; *pneumonia* and *typhus*. A peculiar constitution of the atmosphere appears to predispose the system to a typhus fever, under circumstances peculiarly favourable to the production of pneumonia: hence that state of disease is induced which may be denominated *Typhoid Peripneumony*, or Pneumonia Typhodes; a disease which, in some respects, strongly indicates the free use of the lancet, and in others, the liberal administration of stimulants. Hence originates a contrariety of treatment, which experience has proved to be very injurious to the patient: while some bleed copiously, others resort to the most powerful stimulants. When the prominent and opposite symptoms of this disease are nearly balanced, prudence would dictate the use of neither of these classes of remedies; while depletion increases the symptoms of typhus, powerful stimulants produce delirium, and aggravate all the fatal symptoms of pneumonia. It is only when one of these classes of symptoms clearly and distinctly predominates, that either of these remedies are ever proper. Indiscriminately to condemn both in all stages of the disease, therefore, evinces an imperfect knowledge of the complaint, and is the height of absurdity and presumption.

This is the same disease that prevailed in some parts of this and the eastern states, during the last winter, and is exclusively confined to this season of the year. It prevailed in England in the year 1685, and was faithfully described by Dr. Sydenham, under the name of the winter fever, which in a subsequent treatise, he denominated the *new* fever. In attempting to account for the origin of the fever, he traces its causes to the plague, which had preceded it a few years, and of which he considers this as completely "depuratory." Since his time we do not find it described as prevailing in any country till the year 1811.

"Doctor Macbride considers it as a mixed fever, and terms it *febris hyemalis*. Sauvages, a species of Synochus, and names it *synochus hyemalis*, though he thinks it merits more the denomination of *catarrhalis*. Both these authors have taken their account from Sydenham. Dr. Cullen classes it as a variety of the synocha, or inflammatory fever. Huxham, in his observations *de aere et morbis epidemicis,* describes a fever, which he says nearly resembles this; and Dr. Swan thinks the mild catarrhal fever of Hoffman, which that author so accurately describes, and treats with so much judgment, bears to this a great similitude."—WALLIS.

After premising this brief sketch of the symptoms and history of this disease, I shall proceed to examine the remedies which have been prescribed.

1st. *Bleeding.* This, as I before observed, is extremely hazardous, unless symptoms of pneumonia or synocha decidedly predominate, and even in this case it should be used with extreme caution, and in small quantities, otherwise the typhus tendency of the disease prevails, and the patient sinks and dies. I have seen but one case in which it was indicated, and in which I took but four ounces.

Letters from eminent practitioners in some of the counties where it prevailed the last year, inform me, it was occasionally practised there with success. This was the practice of Sydenham, and is used by many the present season.

2d. *The warm bath.* In this disease the blood recedes from the surface and extremities, accumulates in the large vessels, and completely oppresses the action of the heart and arteries. A universal coldness and frequent chills consequently pervade the whole surface of the body till the torpor of the extreme vessels is overcome.

The first indication of cure is, therefore, to restore action to the surface and extremities, and thence to preserve that equilibrium of the circulation which has been entirely destroyed.

This indication is successfully answered by the total immersion of the body in warm water, in the incipient stage of the cold chill. If the warm bath is applied at this early period, the disorder is effectually subdued in forty-eight hours; but if delayed till the cold stage is considerably advanced, its operation is less efficacious.

Immersing the extremities in warm water, and general fomentations to the surface, may be substituted when the warm bath cannot be procured. This should be continued till the chills have entirely subsided; it should then be discontinued, otherwise the copious sweats thereby induced will debilitate and sink the patient, or accumulate the morbid heat of the system, and thence induce delirium. Warm diaphoretic teas should accompany the use of the warm bath.

3d. *Emetics*. When the head is affected with pain or a vertigo, or a dull heavy sensation, accompanied with an oppression at the stomach, or a nausea and vomiting, an emetic is indispensably necessary. It invariably ejects a quantity of cold, viscous slime, which resembles, in tenacity and colour, the white of an egg. If this fluid is not evacuated, a torpor of the stomach and bowels ensues, which enhances the danger of the disease in its progress, and essentially impedes the cure.

When the emetic has been given early in the disease, and its operation proves effectual, the preceding symptoms readily yield; but if they continue obstinate, the emetic may be repeated, and succeeded by

4th. *Cathartics*. Calomel, or calomel and jalap, if given early in the disease, and repeated as the symptoms may require, soon obviates the obstinate costiveness of the bowels, and restores their natural tone, by evacuating their extremely offensive and debilitating contents.

5th. *Diaphoretics*. Although profuse and long continued sweats are evidently injurious, as they induce debility without, in the least, promoting a crisis, yet a naturally soft and moist state of the skin is always accompanied with a mitigation of the pain, and ought ever to be encouraged. To promote this object, I make a liberal use of snake root, sage, boneset, or hemlock tea, and every four hours, or oftener, if necessary, give a powder very similar to Dover's: to this powder I sometimes add calomel, if the pneumonic symptoms do not readily yield.

6th. *Epispastics.* When the pains in the thorax are violent, and respiration difficult, and do not yield to spiritous fomentations, I generally apply a large blister to the breast or side. In most cases the fomentations will succeed alone, and are more efficacious than blisters.

7th. *Demulcents*, occasionally combined with opiates, are necessary to alleviate the cough and pains of the breast.

This course of treatment will generally promote a crisis in five days, and sometimes sooner; but should the disease be protracted to the typhus stage, the remedies usually prescribed in that type of fever then become necessary.

Meteorological Observations, by Capt. Alden Partridge, of the Military Academy, West-Point, N. Y.

METEOROLOGICAL TABLE,

Containing the results of a series of Observations, made at West-Point, State of New-York, from the 5th of April to the 1st of November, 1810.

		THERMOMETER.					BAROMETER.				REMARKS.					
MONTHS.	*No. of observations.*	*Greatest degree of cold.*	*Greatest degree of heat.*	*Mean temperature.*	*Greatest variations.*	*Difference of temperature between each succeeding mo.*	*Greatest altitude.*	*Least altitude.*	*Mean altitude.*	*Greatest variations.*	*Date of the greatest degree of cold in each month.*	*Date of the greatest degree of heat in each month.*	*No. of pleasant days.*	*No. of days on which rain fell.*	*No. of cloudy days without rain.*	*No. of days pt. clear & pt. cloudy.*
April.	73	33°	80°	60°	47°		30.00	29.16	29.60	80	11th. s.r.	27th. P.M	12	7		6
May.	86	37	94	66 1-10	57	6 1-10	29.83	28.94	29 59	89	8th. do.	29. 4 P.M	18	8	1	4
June.	85	52	86	72 3-4	34	6 13-20	29.85	29.40	29.61	45	8th. do.	16 & 17.	13	13	1	3
July.	70	65	88	76	23	3 1-4	29.80	29.38	29.59	42	2d.	12th. do.	15	13	1	2
Aug.	90	49	90	74 1-2	41	1 1-2	29.80	29.30	29.58	50	31st. A. M	12th. do.	13	15		3
Sept.	90	46	84	66 2-3	38	8 1-6	30.08	29.53	29.76	55			14	9	2	5
Oct.	73	29	79	55 1-4	50	11 3-12	30.16	29.04	29.70	1.12			16	9	2	4
	567	29°	94°	67 2-7	65°		30.16	28 94	29.63	1.22			101	74	7	27

METEOROLOGICAL TABLE,

Containing the results of a series of Observations made at Norwich, State of Vermont, from the 1st of July, 1811, to the 1st of May, 1812.

		THERMOMETER.					BAROMETER.											
MONTHS.	*No. of observations.*	*Greatest degree of cold*	*Greatest degree of heat.*	*Meaⁿ temperature.*	*Greatest variations.*	*Difference of temperature between each succeeding mo.*	*Greatest altitude.*	*Least altitude.*	*Mean altitude.*	*Greatest variations.*	*Date of the greatest degree of cold*	*Date of the greatest degree of heat.*	*Depth of snow in inches.*	*No. of clear days.*	*No. of days on which rain fell.*	*No. of days on which snow fell.*	*No. of cloudy days.*	*No. of days pt. clear & pt. cloudy.*
July.	40	50°	92°	70 2-3	42°		29.17	28.71	28.91	.46	27th.	18th.		14	16		0	1
Aug.	90	45	92	70	47	2-3	29.30	28.75	28.67	.54	9th.	20th.		18	9		1	3
Sept.	84	31	85	65	54	5	29.24	28.55	28.94	.69	27th.	4th.		17	7		2	4
Oct.	83	17	75	17	58	18	29.42	28.50	28.99	.92	27th.	12th.	3 5-10	13	12	2	3	1
Nov.	82	12	51	32 1-2	39	14 1-2	29.44	28.40	28.95	1.04	26th.	9th.	5	7	13	3	3	4
Dec.	87	-16	48	19 1-2	64	13	29.20	28.09	28.74	1.11			23 9-10	3	2	8	9	9
Jan.	88	-24	36	14	60	5 1-2	29.23	28.09	28.60	1.14	18th.	26th.	23 4-10	3	0	16	6	6
Feb.	75	-31	35	15	66	1	29.14	28.15	28.77	.99	25th.	4th.	38	7	1	13	2	6
Mar.	86	- 4	51	24 2-3	47	9 1-3	29.25	28.45	28.90	.80	2d.	27th.	14 1-10	10	3	7	4	7
April.	79	23	65	40	42	15 2-3	29.26	28.38	28.89	.88	12th.	25th.	5	5	7	3	2	13
	794	-31	92°	39 9-10	123		29.44	28.09	28.83	1.35	Fb. 25.	Jul. 18.	112 9-10	97	70	52	32	54

Note.—The town of Norwich is situated in the east part of the state of Vermont, adjoining Connecticut river, and opposite Dartmouth College, in the state of New-Hampshire, in north latitude 43° 33′. The altitude of that part of the town where the observations were made, above tide-water, I found by a barometrical calculation to be 917 feet, and 629 feet above Connecticut river. In the second column of the above table, whenever the sign – is prefixed, it denotes that the thermometer was below cipher ; thus, –16, denotes that thermometer was 16 degrees below cipher.

METEOROLOGICAL TABLE,

Containing the results of a series of Observations made at West-Point, State of New-York, from the 1st of April to the 31st of May, 1811, and also from the 11th of May to the 30th of November, 1812.

MONTHS.	*No. of observations.*	THERMOMETER.					BAROMETER.				*Date of the greatest degree of cold.*	*Date of the greatest degree of heat.*	*Depth of snow in inches.*	*No. of clear days.*	*No. of days on which rain fell.*	*No. of days on which snow fell.*	*No. of cloudy days.*	*No. of days pt. clear & pt. cloudy.*
		Greatest degree of cold.	*Greatest degree of heat.*	*Mean temperature.*	*Greatest variations.*	*Difference of temperature between each succeeding mo.*	*Greatest altitude.*	*Least altitude.*	*Mean altitude.*	*Greatest variations*								
1811																		
April.	90	27°	82°	52	55°		30.10	29.10	29.44	1.00	2d.	18th.	0	14	8	2	0	6
May.	75	40	77	60	37	8	30.06	29.10	29.66	.96	3d.	7th.	0	17	11	0	1	2
	165	27°	82°	56	55°		30.10	29.10	29.55	1.00	Apr. 2d.	Ap. 18.	0	31	19	2	1	8
1812																		
May.	59	46°	79°	61	33°		29.91	29.23	29.60	.68	17th.	31st.	0	3	9	0	1	7
June.	77	57	86	71 1-3	29	10 1-3	29.76	29.20	29.49	.56	5th	9th.	0	3	18	0	0	9
July.	92	56	91	76	35	4 2-3	29.80	29.40	29.59	.40	1st.	7th.	0	8	11	0	0	12
Aug.	78	63	87	73 1-3	24	2 2-3	29.85	29.40	29.60	45	13th.	25th.	0	5	13	0	1	12
Sept.	89	48	81	66 1-3	33	7 8-15	29.98	29.27	29.72	.71	21st.	2d.	0	6	11	0	3	10
Oct.	57	40	78	55 2-3	38	10 8-15	30.00	29.20	29.66	.80	24th.	2d.	0	5	9	0	1	16
Nov.	89	22	67	44	45	11 2-3	30.16	29.08	29.57	1.08	25th.	5th.	0	5	7	2	3	13
	541	22°	91°	64	69°		30.16	29,08	29.60	1.08	Nov. 25	July 7	0	35	78	2	9	79

Note.—In the above, as also in all the preceding tables, the barometer used was graduated in French inches.

Literary and Philosophical Society of Liverpool.

This society, whose objects are similar to those of the Literary and Philosophical Society at Manchester, was instituted in February, 1812. The number of members already exceeds sixty; and their meetings are held monthly, from October to May, inclusive. The officers are, the Rev. *Theophilus Houlbrooke*, President; Rev. *Joseph Smith*, Dr. *Bostock*, and *John Theodore Hostor*, Esq. annual Vice-Presidents; Dr. *Thomas Steward Traill*, Secretary.

Address of the Students of the College of Physicians and Surgeons.

At the particular request of the chairman and of the students a place is given to the following address. The wishes here so ardently and so ingenuously expressed, we have the fullest confidence will be realized, and that at no distant day, the students of medicine will unite in resorting for instruction to this College, as the *medical establishment of the state.*—Ed.

At a meeting of the Students who attended the several courses of Lectures in the College of Physicians and Surgeons of New-York, held at the College Buildings, Pearl-street, on Monday the 2d of March, 1813; Wm. F. Quitman, *Chairman,* James Seaman, *Secretary, it was unanimously resolved, that the following Address of Thanks to the Professors be made public:*

The students of the College of Physicians and Surgeons, in the city of New-York, unwilling to suppress the emotions of gratitude they feel for the instruction they have received during the session of the college, just closed, avail themselves of this opportunity of manifesting, thus publicly, their acknowledgments. Sensible of the importance and dignity of the profession, of which they expect shortly to become members, it is with peculiar satisfaction they have witnessed the increased zeal and spirit of our legislative, and other public bodies, for the establishment and support of a state medical school. Every member of the community is vitally interested in whatever adds to the facilities of medical instruction; and the exertions of the legislature in organizing the College of Physicians and Surgeons in this city, have already produced effects the most important and beneficial. Public instruction can be effectually imparted only by means of public munificence; and it will not be disputed, that the science of medicine has the first claim to the patronage of a great and powerful state. It would be idle here to recount the superior advantages which the city of New-York possesses for a great medical establishment. With a population equal to that of most of the capitals of Europe, and composed of inhabitants from all parts of the world; with a large and well endowed hospital, and other public charities; the student here may practically learn the nature of the various diseases which affect man in every part of the globe.

The honourable the regents of the university have done equal honour to themselves in the choice of such a place for a permanent medical college; in the extensive plan of medical education which they have formed, and in the selecting of those gentlemen whom they have appointed as teachers; for, in a science like medicine, depending so much upon observation, it is essential that the professor, in order to become the successful teacher, should unite to the knowledge derived from books, the experience arising from his own immediate observation.

To our distinguished Professor of Anatomy, Surgery, and Physiology, Dr. J. AUGUSTINE SMITH, we readily tender our warmest acknowledgments. In vain would the student attempt the acquisition of correct anatomical and physiological knowledge without the practical views afforded by oral instruction. For the able and happy manner in which the complicated structure of the human frame has been unfolded, and the pointed application of this knowledge to the important duties of the surgeon, (and particularly for his attention to those subjects which more immediately belong to naval and military surgery,) we feel ourselves greatly indebted to the talents and exertions of Dr. SMITH.

To our learned Professor, Dr. M'NEVEN, we are under many obligations for his course of lectures on chemistry. His free communication of the most recent discoveries and improvements which are daily adding fresh lustre to this science, evince at once, the industry with which he pursues this branch of human knowledge, and the interest he takes in diffusing it.

To Dr. Hosack, the Professor of the theory and practice of physic and clinical medicine, and lecturer on midwifery and the diseases of women and children, we take pride in thus declaring our emotions of sincere and ardent gratitude, for the elaborate courses of instruction he has given on the important branches committed to his care. His enlightened and liberal views of the profession; his minute and extensive acquaintance with the treasures of ancient and modern learning; his accuracy of observation, derived from the stores of his own ample experience; his judicious and extended application of the system of induction to medical philosophy; his impressive and ready method of communication, have imparted to his lectures the highest interest, and have left us in equal admiration of the science itself and of the ability of the lecturer.

Gentlemen, to you unitedly we present our congratulations, that the unprincipled attempts that have been directed against the institution to which you are so much devoted, have failed of success; and that the college still continues to flourish with increased vigour in defiance of the malice of its enemies.

WM. F. QUITMAN, Chairman.
JAMES SEAMAN, Secretary.

University of the State of New-York—College of Physicians and Surgeons.

At a meeting of the Board of Trustees of the College of Physicians and Surgeons of New-York, held on Saturday the 28th February, 1813, John W. Francis, M. D. was unanimously appointed Lecturer on the *Institutes of Medicine* and the *Materia Medica* in that College.

The American Academy of Arts.

PURSUING the plan announced in a former number of the Register, some account is now given of the *American Academy of Arts.*

The first step towards the formation of the American Academy of Arts, established in New-York, was made in this city in the year 1801. Among those who suggested the plan of so honourable an undertaking, and who have zealously patronized it, we might enumerate the names of many gentlemen of the first importance in the state. Of this number, we shall, at present, only mention John R. Murray, De Witt Clinton, Charles Wilkes, William Cutting, Peter Irving, and Edward Livingston, Esqs. This last named gentleman, who, at that time was mayor of the city of New-York, was chosen the first president of the society. As was to be expected, from an association voluntarily formed, and having for its object the most laudable purposes, no small degree of zeal was manifested by its members for its permanent establishment. Shortly after Edward Livingston, Esq. removed from the city of New-York, and the Hon. Robert R. Livingston was unanimously chosen the second president. The connection of this gentleman with the society may be reckoned among the most propitious circumstances connected with its history. Endowed by nature with a fine taste which he had long successfully cultivated; and possessing the most ardent desire for the aggrandizement of the society, his appointment as minister at the court of France, enabled him to gratify his wishes to the fullest extent. To his spirited exertions, while in that capacity, we are much indebted for the very valuable collection of statues, busts, &c. procured by the institution in 1803, a catalogue of which was published in the same year. To his instrumentality also are we indebted for the rich assemblage of paintings and prints, presented the society by the Emperor Napoleon, who, at that time, with Mons. Barbe Marbois, and Vivant Denon, was elected an honorary member. Indeed, these presents, and the donations from his own private cabinet, are the most important of the collection in the possession of the academy, and are of themselves superior to any other in the United States.

From the period of Chancellor Livingston's return to his native country, in 1804, he took a no less active interest in the welfare of the society, and was annually re-elected the president until the time of his death, in March, 1813, when the Hon. De Witt Clinton, Esq. was chosen to succeed him.

We shall close this brief notice of the society with the insertion of the officers elected at their last anniversary meeting in February, 1813, and the subsequent proceedings of the institution upon the demise of their much lamented president

At a meeting of the American Academy of Arts, held at the government house on the 9th February, 1813, the following gentlemen were elected officers of the society for the ensuing year.

Hon. ROBERT R. LIVINGSTON, President.
JOHN R. MURRAY, Esq. Vice President.
Hon. DE WITT CLINTON. }
WILLIAM CUTTING, Esq. }
DR. DAVID HOSACK. } Directors.
ROBERT FULTON, Esq. }
LOUIS SIMOND, Esq. }
CHARLES WILKES, Esq. Treasurer.
JOHN G. BOGART, Esq. Secretary.

At a meeting of the society, held on the 13th of March, 1813, the following resolutions were passed.

Resolved, That the members of the Academy wear the customary mourning on the left arm for thirty days, as an evidence of respect for the memory of their deceased president, the Hon. Robert R. Livingston.

Resolved also, That the Hon. De Witt Clinton be appointed to deliver a discourse before this Academy commemorative of the talents, virtues, and public services of the late founder and president of this institution. At the same meeting, the Hon. De Witt Clinton was unanimously elected president, and Cadwallader D. Colden, Esq. one of the directors of the Academy for the ensuing year.

The collection of the society is at present preserved in rooms, fitted up for that purpose, in the government-house in this city; but it is hoped that ere long, the institution will be enabled to procure more spacious apartments better calculated to answer the objects originally intended.

Successful Treatment of Spina Bifida.

Astley Cooper, Esq. of Guy's Hospital, London, has lately communicated to the public in the Medico-Chirurgical Transactions, vol. 2d. two cases of spina bifida successfully treated upon a new plan. As there is scarcely any modern improvement in medicine of more importance than this of Mr. Cooper, we shall detail, in his own words, his new method of treatment, the paliative and the radical.

" The first consists in treating the case as a hernia, and applying a truss to prevent its descent: and the second in producing adhesion of the sides of the sac, so as to close the opening from the spine, and stop the disease altogether. The first is attended with no risk. The truss forms an artificial vertebra, when the natural is defective, a buttress which supports the part, and prevents the increase of the disease; but in this mode of treatment, the truss is required in future life; for if discontinued, the tumour re-appears, and will grow, as hernia does, to great magnitude, but with more fatal consequences. On the contrary, the adhesive mode of cure exposes the patient to much constitutional irritation, but leaves him without the apprehension of the future return of the disease."

"If the tumor is connected with an unnatural enlargement of the head, hydrocephalus internus is conjoined with spina bifida; and the water will accumulate in the ventricles, if the tumor in the loins is attempted either to be palliated or radically cured. If the lower extremities are paralytic, or the fæces and urine are discharged involuntarily, there is no hope of relief.

"If the tumour has burst at the time of birth, or bursts soon after, there is little hope of cure; for, although the opening in the skin may be closed by lint and adhesive plaister, and union be produced so as to admit of no further discharge of water, yet hydrocephalus internus will still succeed.

"The deficiency of the spine is sometimes so great as to lead to the production of a most extended tumour at the time of birth; and when this is the case, the nerves are so far protruded from the spinal canal as to injure the structure of the spinal marrow, and to render every attempt at cure unavailing.

"I should feel myself deficient in that liberality with which our profession ought ever to be marked, and usurping more than my due, if I did not state that the principle of the radical cure, as proposed for spina bifida, is similar to that recommended by Mr. Abernethy in his work on psoas abscess. The mode, however, which I have employed for the purpose is, I believe, the only safe one, that of puncturing the part with a needle; for every opening of a larger size will be attended with the utmost danger.

"I have, for many years, used this plan in cases of ganglia, when I could not burst them by a blow, or excite their removal by pressure or irritation; and I have never seen it followed by inflammation or any serious consequence; and it may be used in cases of accumulations in joints, and other cavities, where larger openings are dangerous."

Aneurism of the Femoral Artery.

Mr. S——n, of the United States navy, in a duel which took place about two months since, was wounded in the right thigh, the ball passing through the limb in the vicinity of the femoral artery, and somewhat above the middle of the thigh. About two weeks after the accident the patient observed a tumour to be forming, which was attended with some throbbing. Dr. Marshall, the surgeon of the navy hospital, immediately examined it, and ascertained it to be an aneurismal tumour of the femoral artery. It increased in size so rapidly, that in about a week from the time it was first observed, it had extended at least to between four and six inches in diameter. The pulsation was also remarkably strong, and the whole limb became painful from the pressure so suddenly produced upon the parts affected. As the operation for femoral aneurism has been seldom performed in the United States, and Dr. Marshall considering it necessary that it should be done without delay, a consultation was thought proper, when Dr. Hosack and Dr. J. A. Smith were requested to visit the patient.

On the 1st of March, Dr. Hosack performed the operation by tying and dividing the artery a short distance above the sac, at the same time securing the upper ligature, by passing a needle through the coats of the artery in the manner recommended by Mr. H. Cline. On the 13th day the ligatures came away. Since that time the wound has healed without the least impediment; the tumour is rapidly decreasing, and the patient recovering his general health. It is, perhaps, worthy of remark, that for the first two days after the operation, the limb was below its ordinary temperature, but immediately after that time it recovered, and has since steadily retained its natural degree of heat.

As the extent and situation of the tumour so nearly correspond with the case already related in this work,* we consider it unnecessary to add any further details.

Carotid Aneurism.

In February last the operation for an aneurism of the carotid artery was performed in the New-York hospital by Dr. Post, but we have not yet been enabled to obtain the particulars of the case.

Nectoux's Memoir on the Senna.

Mons. H. Nectoux, of the Institute of Egypt, has lately offered to the National Institute of Paris, a Memoir on the several species of Senna. He has particularly dwelt upon the Cassia Senna of Lin. which is the Cassia of Thebes; the Cassia Lanceolata of Lamarck, known as the Senna of Nubia; the Cynanchum Oleæfolium, with which the Senna is generally adulterated, and the Cassia Fistula of Linnæus, well known as the common Senna of the shops. The memoir is enriched with coloured engravings in folio.

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* Register, vol. 3d. p. 49.

Greenwich Type Foundery, New-York.

We regret that want of room prevents us, on the present occasion, from giving some account of the late establishment in New-York of *Messrs. E. White and Co's* improved and extensive foundery for the casting of printing types. In a future number we shall detail such circumstances, connected with the institution, as we are confident will prove acceptable to all who take an interest in the success of our native manufactures. All we propose to mention, at this time, is, that after the expenditure of much wealth, and with the most indefatigable industry for upwards of five years, Messrs. White and Co. are enabled to cast all the various kinds of types in common use, that is, all the intermediate regular sizes from nonpareil to great primer, inclusive. From the impression of numerous specimens of their make which we have seen, we are fully warranted in saying, that the types cast at the New-York Foundery, excel, in point of beauty and correctness, all that have hitherto been made in this country, and that they will not suffer by comparison with any imported. As evidence of the superior excellence of the type from this foundery, it may be sufficient to observe, that no other is ordered by the printers of New-York; and we are informed that some of the Philadelphia publishers have given orders to Messrs. White and Co. for extensive fonts, in preference to obtaining them from the establishment in their own city.

Charles Bell's Engravings of the Arteries.

Mr. Anthony Finley, of Philadelphia, has lately offered to the medical profession an American edition of *Bell's Plates of the Arteries of the Human Body.* The work is enriched with fourteen coloured engravings, and the very superior and beautiful manner in which they are executed reflects the highest credit on the state of the arts in this country. Of a work already so well known and so much esteemed, it is unnecessary to say any thing in commendation. Mr. Finley proposes, if sufficient encouragement be given, to follow the present engravings, with those of the bones, muscles and joints, nerves and brain. If he receives the support he deserves, we have no doubt he will be enabled to complete the undertaking.

Observations on the Weather of the City of New-York, for the months of January, February, and March, 1813.

JANUARY.

The weather of the month of January was, upon the whole, of a moderate temperature, clear, and very pleasant. The thermometrical changes were inconsiderable, the mercury standing, the greater part of the time, at or about the freezing point; the wind chiefly from the westward or southward. On the 8th, which was the coldest day, the thermometer stood at 7 A. M. at 12, at 3 P. M. at 20, and at 7 P. M. at 19 degrees of Fahrenheit. On the 13th and 14th, a small quantity of snow fell, accompanied with wind from the N. W. From the 23d to the 26th, repeated falls of rain, with wind from the N. E. Snow again fell to the amount of five inches depth on the 27th. On the 31st the mercury stood at 7 A. M. at 17 degrees.

FEBRUARY.

The weather of February set in with considerable severity, and throughout the month was much colder than that of

January. On the 1st, the thermometer stood at 7 A. M. at 16, at 3 P. M. at 24, and at 7 A. M. at 29. From the 4th to the 7th the atmosphere was remarkably humid and overcast. On the night of the 10th, we had some snow. After this the weather again, though cold, became clear and pleasant. On the 18th the mercury stood at 18 degrees; this was the coldest day in February. Some snow fell on the 20th, on the night of the 21st, and on the morning of the 22d. On the 26th and 27th more moderate; wind N. W.

MARCH.

During March, like the same month of the preceding year, we experienced many overcast and rainy days, and many sudden and great changes in the temperature of the atmosphere. For the first eight days of the month the weather was either rainy or very humid, wind generally N. E., and on the 6th and 7th the thermometer stood at 20 degrees through the day. On the 11th and 12th more rain. On the night of the 17th the rain also fell in great quantities, accompanied with lightning and heavy thunder; thermometer at 32. After this it became pleasant and continued so throughout the month, except on the 28th, when we again had more rain. On the 23d, however, the mercury stood as low as 23, wind considerable, and from the N. W.

Quarterly Report of the Diseases which prevailed in the city of New-York, during the months of January, February, and March, 1813.

So necessary are the tonic effects of the winter's cold to counteract the relaxation occasioned by the heat of the summer season in most of the United States, that, whenever we are in this respect disappointed, sickness may be expected as the inevitable result. Hence the proverb, that *a green Christmas makes a fat church-yard in the spring.* In the present instance this is verified, for the unusually open and wet season, we have just passed through, has been attended with its corresponding diseases and mortality.

Inflammatory complaints, in all their various forms, have prevailed throughout the winter and the month of March. But in addition to the usual diseases of the latter month, which usher in the spring, we have also had occasion to see the mixed disease which has been so prevalent in the northern and eastern states, and in the western part of the state of New-York, the *peripneumonia typhodes*, or malignant pleurisy. The writer has had occasion to prescribe in five cases of this disease ; in two of them, the patients both being of an athletic habit of body, the pulmonary affection was only relieved by large and repeated bleedings, in connection with the other antiphlogistic and alterative means usually prescribed in diseases of this compound character.

In the three other cases such was the general prostration of the system from the commencement, that it was not deemed safe to employ the lancet. The bowels being emptied by a mild laxative, our whole dependence was placed upon the use of small doses of *calomel*, *antimony*, and *opium ;* sudorific drinks, fomentations to the extremities, and blisters to the chest. By this treatment, adapted to the different habits of body in which the disease occurred, the above five cases have all terminated successfully.

We are informed by one of the surgeons of the New-York hospital, that in two cases which ended fatally in that institution, the bodies were examined after death, and that in one the external surface of the lungs was covered with a membranous exudation and other marks of high inflammation. In the other, those organs exhibited no external marks of inflammation, but were so full of the mucous matter which had been effused throughout their whole cellular structure, that upon raising the sternum, they still retained their distended appearance, without the least of the usual collapse which takes place upon the admission of air into the cavity of the chest.

Besides this evidence of a peculiar condition of the atmosphere, we have also, for some weeks past, remarked, that the ordinary inflammatory diseases of the season have exhibited an unusual degree of malignancy, not only in their character, but in their termination. In a case of common cynanche tonsillaris, which in its commencement was very inconsiderable, and the febrile symptoms so mild as scarcely to confine the patient to his house, upon the third day, the uvula became sphacelated and dropt off: but by the use of a gargle of yest, borax, and honey, and the free use of sudorific drinks, the disease of the throat was arrested, and the patient restored. In another case, in a female about fifty-five years of age, an inflammation of the eye came on spontaneously without any previous exposure to cold, or any violence done to the part affected. In a few days, notwithstanding the use of the lancet, cathartics, blisters, and scarification of the parts affected, the whole eye became involved in the disease, attended with a general thickening of the cornea, and tunica adnata, and a manifest enlargement and protrusion of the whole organ. Even in this case, these symptoms were not accompanied with the usual redness and pain in the part, or the general symptoms attendant upon ophthalmia. On the contrary, there was a degree of insensibility of the eye amounting almost to paralysis, and a lax and turgid state of all the parts, the seat of the inflammation, accompanied with an œdema of the upper eye-lid. After these appearances took place, a general debility of the system suddenly supervened, followed by stupor and other evidences of compression of the brain, and ultimately proved fatal, exhibiting in the last stage most of the symptoms of that form of apoplexy that frequently terminates the typhoid state of fever.

The measles and hooping-cough have prevailed throughout the winter, and still continue, retaining the mild character they exhibited upon their first appearance. During the last six weeks, many cases have also occurred, especially among children, of the *febrile nettle rash*, the *urticaria febrilis* of Dr. Willan. In some instances it also attacked adults, but in all it was exceedingly mild, being preceded by a very moderate degree of fever, and readily yielding to mild evacuations and tepid drinks. In a few cases the eruption was so universal, and attended with so much febrile excitement, that it was mistaken by some practitioners for scarlatina.

Hydrocephalus, in its acute form, is a disease of frequent occurrence in this city. Some cases have lately fallen under the care of the writer: in three of them a cure was effected by blood-letting, active cathartics, and blisters to the scalp, all which were made use of during the *inflammatory* stage of the disease, before the symptoms of effusion had taken place. In the other case the disease proved fatal notwithstanding the repeated use of the lancet, cupping, and other evacuations. But in the latter instance, mercury in the form of calomel, was employed in repeated and large doses. In the two former this medicine was not administered except as a cathartic in combination with large doses of jalap. This fact reminds us of the remark of Dr. Rush, that in consequence of his unsuccessful use of mercury in dropsy of the brain, he has "declined the use of that medicine altogether in that disease, except when combined with some purging medicine, and that he administers it in this form, chiefly with a view of dislodging worms."* Query. Does not mercury, by the excitement it produces, add to the inflammation which characterises the first stage of hydrocephalus?

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* Med. Inq. and Obser. vol. 2. p. 241, 3d. ed.

In the former volumes of this journal we have recorded cases of apoplexy, as the produce both of the intense heat of summer and the cold of winter. During the past winter several instances of this disease have fallen under our notice, especially in the aged, the intemperate and the indolent. By means of moderate evacuations, diminishing the fullness of the vessels, succeeded by the volatile alkali, and other stimulants calculated to restore the circulation through the parts which have been oppressed, this disease has frequently been removed. The dissections noticed by Mr. Abernethy in his valuable work on the diseases of the head, induce us to believe that even in sanguineous apoplexy, where extravasation may have taken place, as is proved by the apoplectic cells found in the brain after death, that recovery is not to be despaired of. During the last month we have had occasion to see a fatal case of this disease in a gentleman whom we had attended during the last three years in repeated and violent attacks. The following appearances observed upon dissection, clearly show both the exciting cause of his last fatal illness, and the impressions left by the paroxysms he had formerly sustained. Dr. J. A. Smith, the Professor of Anatomy in the College of Physicians and Surgeons, who at our particular request, examined the brain, has favoured us with the following memoranda.

" The vessels of the pia mater contained less blood than usual; a considerable effusion had taken place between that membrane and the tunica arachnoidea. The substance of the brain was softer than I ever recollect to have seen it in a person so recently dead: he was examined about six hours after his death. There was rather more water than usual in the ventricles. In the middle of the right hemisphere of the cerebrum a cell was discovered like those described by Mr. Abernethy, and a much larger one of the same kind was afterwards found in the middle lobe of the cerebrum on the opposite side. The plexus choroides adhered slightly to the left thalamus, which appeared of a dusky red colour, and upon cutting into it there was found a considerable quantity of effused, coagulated blood. This had, no doubt, been the cause of the patient's death. The effusion and cell, last mentioned, are completely shown in a preparation which I have made of the parts."

OBITUARY.

Died, at his Mansion House, Clermont, on the 26th of February, in the 66th year of his age, the Hon. Robert R. Livingston, LL. D. President of the Society for the Promotion of Useful Arts, and formerly Minister of the United States, at the court of France, &c. &c.

RECENT AMERICAN PUBLICATIONS.

Annual Address, delivered by appointment, before the Society for the Promotion of Useful Arts, at the capitol, in the city of Albany, on the 3d of February 1813. By Theodoric Romeyn Beck, M. D. Fellow of the College of Physicians and Surgeons, New-York, and one of the Counsellors of the Society for the Promotion of Useful Arts. 8vo. Albany. Websters and Skinner.

Professor Cullen's System of the Materia Medica, with notes and additions. By Benj. S. Barton, M. D. &c. 8vo. 2 vols. Philadelphia. E. Parker.

The Principles of Surgery, by John Bell, Surgeon. Abridged by J. Augustine Smith, M. D. of the Royal College of Surgeons, London; Professor of Anatomy, Surgery, and Physiology in the College of Physicians and Surgeons in the University of the State of New-York. With Notes and Additions. 8vo. New-York. Collins & Co.

The American Universal Geography. By Jedidiah Morse, D. D. sixth edition enlarged. 2 vols. 8vo. Boston. Thomas & Andrews.

The Literary and Philosophical Repertory, No. 1. Conducted by Professor Hall, of Middlebury College, Vt. Published occasionally. 8vo. Middlebury, Vermont.

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